SEPTEMBER, 1936

COTTON

Serving the
TEXTILE INDUSTRIES

"WE PREFER H & B LONG DRAFT"

SIMPLICITY
THE SECRET OF
EFFICIENCY

Says a New England Mill after Two Years of comparative testing . . .

For two years a large New England mill has been making comparative tests (on a comprehensive manufacturing scale) of the three major types of long draft spinning, with respect to strength and quality of yarn, maintenance cost of machinery and return on investment.

Recently the management of this mill informed us that, all things considered, they prefer H & B Four Roller Long Draft to other types of long draft.

H & B Long Draft's maintenance cost is about the same as that of a three-roller system and it also compares very favorably with the latter as to ease of cleaning.

H & B Long Draft does not hamper the natural movement of the fibres. It permits the longer fibres to assume their natural position at the core of the yarn, thus preserving strength and uniformity. It controls a large percentage of the shorter fibres, but at the same time prevents "plucking" and permits fly (and other waste) to fall clear, so that it can not bunch up and is not carried into the yarn.

Other advantages of H & B Four Roller Long Draft and the reasons for these advantages are given in a descriptive folder, which will be mailed on request.

H & B AMERICAN MACHINE COMPANY
Cotton Preparatory and Spinning Machinery
PAWTUCKET, RHODE ISLAND
BOSTON OFFICE, 161 Devonshire Street; ATLANTA OFFICE, 815 Citizens and Southern National Bank Building; CHARLOTTE OFFICE, 1201-3 Johnston Building

This southern installation effected a 25% increase in production and a 20% increase in breaking strength. Further details on request.

H & B FOUR-ROLLER
LONG DRAFT SYSTEM

PERFORMANCE (not price) DETERMINES VALUE

• One source for yarn, dyeing and converting and ample capacity (in all departments) to meet emergencies as well as routine requirements. That is our conception of service.

• Such complete performance speeds up deliveries, controls and improves quality and concentrates responsibility. The money it saves for customers by reducing lost time, errors and claims is worth far more in the long run than the savings that can be made in the initial cost by shopping for cut prices from incomplete services.

FRANKLIN PROCESS

ESTABLISHED 1910

Pioneers in Package Dyeing

Natural Yarns **Colored Yarns** **Glazed Yarns** **Custom Yarn Dyeing** **Dyeing and Processing Machines**

PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA • CHICAGO • N. Y. REPRESENTATIVE, 40 WORTH ST.

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Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

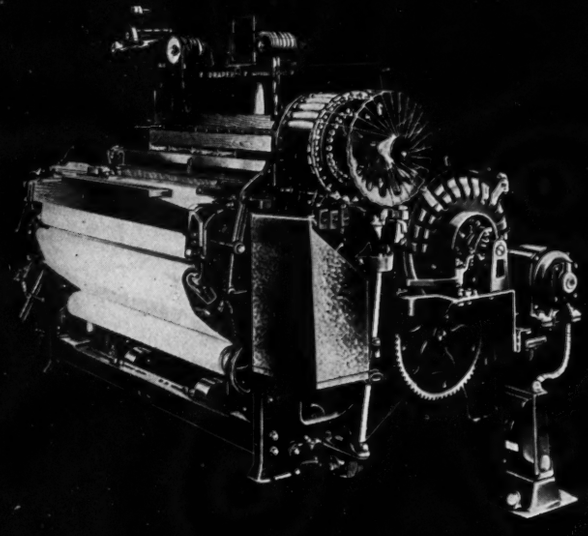
Do You Remember When

A Shiner

Was the Chief Problem
of Rayon Weaving

Those Days Are Gone
Thanks to

Good Mill Management
Producers of Rayon Yarns
and Builders of Looms



Today Rayons
Are Being Woven
at 172 Picks
Per Minute
On

New X K Model High Speed Draper Looms

We Now Offer 4 Models of Looms for Rayon

Draper - Stafford Looms
C Model Draper Looms
} Shuttle Changers

X Model High Speed Looms
X K Model High Speed Looms
} Bobbin Changers

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

TEXACO-TRAINED

The Texaco representative who calls on you was selected for his technical and industrial background. He was Texaco-Trained to make sure that Texaco Products give you all the economies you have a right to expect from your machines.

When he says

"You can reduce your power consumption.."

he speaks from experience

BEFORE he takes your order, he is Texaco-Trained to make sure of the results he promises.

He is Texaco-Trained to furnish a study of the operating conditions in your mill—including bearing temperatures, spindle speeds, whether old or new equipment, and its mechanical condition. Because of his extensive field and engineering background he can make it plain just WHY spindle lubrication in your plant can be improved . . . how power consumption and wear can be reduced all along the line.

Whenever he points out possible maintenance economies—from your bale breaker to packaging equipment—you can rely on his seasoned judgment and the products he recommends to put them into effect.

And he follows through. He checks back, month after month, on the performance you get. He aids you in constantly improving it.

A Texaco-Trained representative will be glad to provide practical engineering service, to prove the economies of Texaco Products.

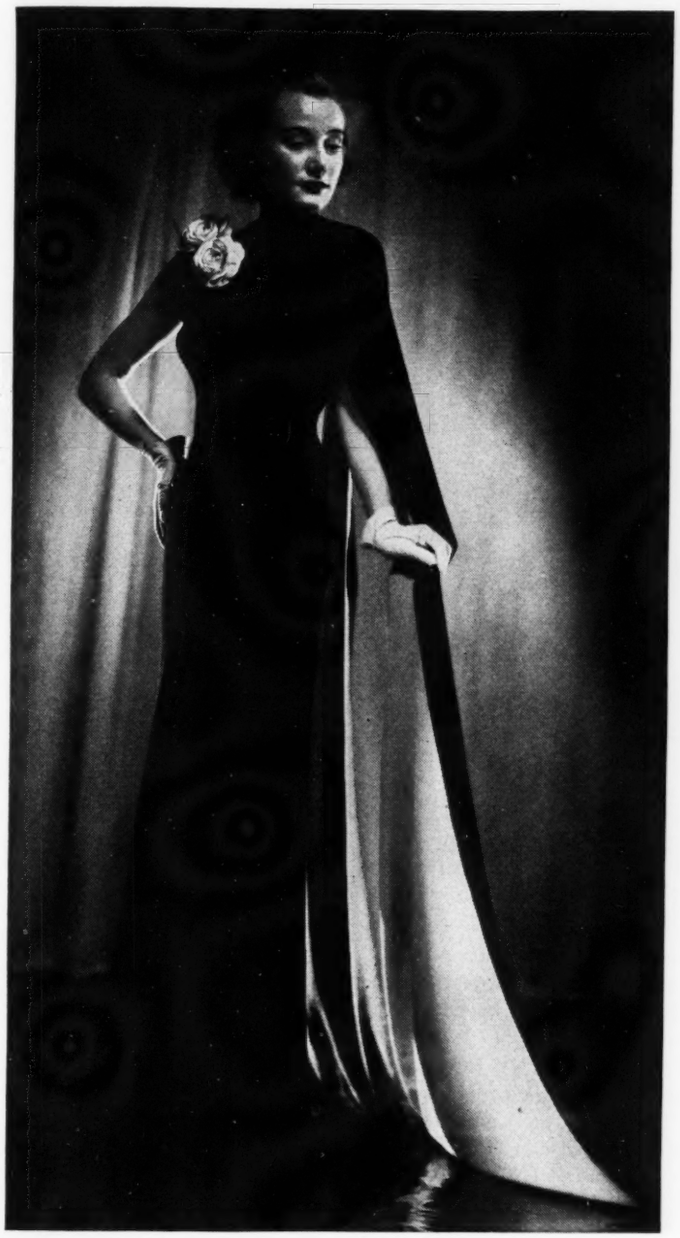
THE TEXAS COMPANY
135 East 42nd St., New York City

Nation-wide distribution facilities assure prompt delivery

TEXACO *Industrial Lubricants*

Her Sleek Lines

are an Engineering Feat!



☆

"LASTEX" The Miracle Yarn, for flawlessly smooth foundation garments and scores of other uses...was made possible by the cooperation of New Departure's creative engineers in devising bearings to meet entirely new requirements.

☆

THE creation of "Lastex," the only round, spun elastic yarn ever made, raised complicated technical problems. Their solution by New Departure engineers made an idea an actuality. Result: more comfort, more style, for millions of men and women. New profits for the producer.

This is but one of hundreds of examples of New Departure's creative engineering. The men who study such situations are interested primarily in how ball bearings can best serve those who may use them. These engineers have repeatedly simplified processes, saved time, increased earnings for many industries. They welcome tough problems, often find the solution in the tough forged steel of New Departure Ball Bearings.

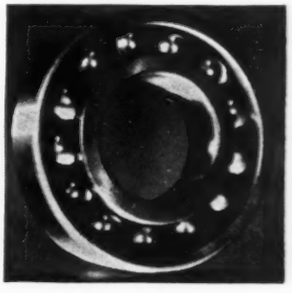
The New Departure Manufacturing Company, Bristol, Connecticut. Engineering staffs also at Chicago, Detroit, San Francisco and London.

Also makers of TRANSITORQ
a million speeds at the touch of a finger

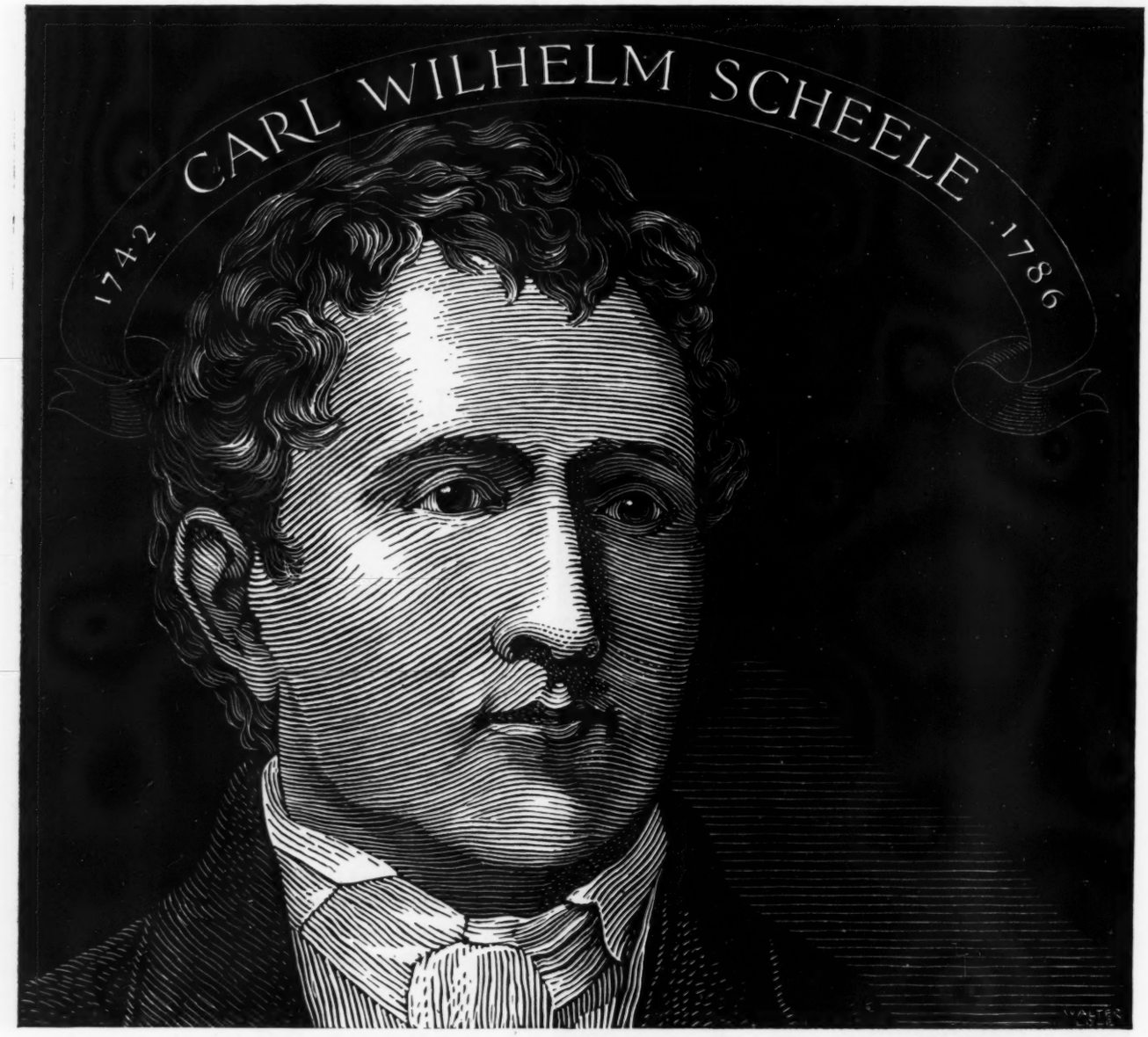
Nothing Rolls like a Ball *No Other Form so Strong*

NEW DEPARTURE

THE *FORGED STEEL* BEARING



NUMBER SIX OF A SERIES OF FAMOUS PIONEERS IN CHEMICAL HISTORY



IN 1774 Scheele, the Swedish pharmacist, while investigating the properties of manganese dioxide, accidentally produced chlorine. Not recognizing the gas as a new element, Scheele named it "dephlogisticated muriatic acid" in accordance with the "phlogiston" theory of that time. It was some years, however, before Scheele's discovery found commercial application in the form of chloride of lime or bleaching powder, and nearly one hundred and fifty years before the wide usefulness of chlorine was fully realized. Ever since the advent of liquefied chlorine gas, early in the present century, Mathieson has been a pioneer in new developments connected with the production, distribution and efficient application of chlorine and chlorine products.

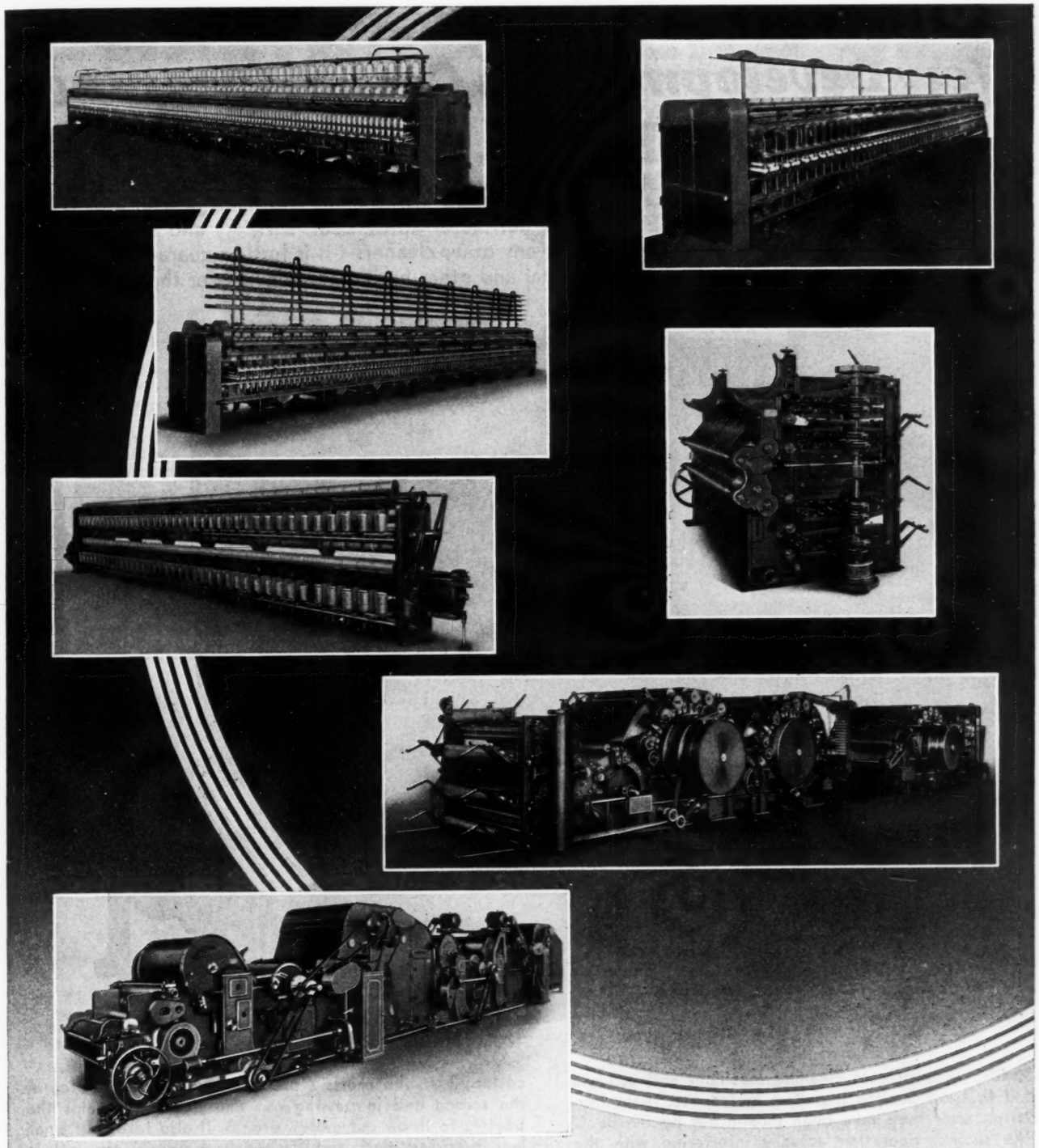
One of the unique distinctions gained by Scheele was an election to the Swedish Academy of Science, an honor never accorded, before or since, to a student of pharmacy. The greatest chemical discoverer of his age, Scheele's accomplishments were the more striking in contrast with their background. An obscure apothecary, living a solitary life in a small town on the shore of a Scandinavian lake, he was constantly harassed by poverty and debt and was at times the victim of the most depressing melancholy.

The MATHIESON ALKALI WORKS (*Inc.*), 60 East 42nd St., New York, N.Y.

SODA ASH . . . CAUSTIC SODA . . . BICARBONATE OF SODA . . . LIQUID CHLORINE . . . BLEACHING POWDER . . . HTH AND HTH-15 . . .

Mathieson Chemicals

AMMONIA, ANHYDROUS AND AQUA . . . PH-PLUS (FUSED ALKALI) . . . SOLID CARBON DIOXIDE . . . CCH (INDUSTRIAL HYPOCHLORITE)



Regardless of tne outcome of the elections this Fall the textile industry will go forward. Mills will be busier than they have been for years. A demand for reconditioning and replacement of equipment will accompany this activity.

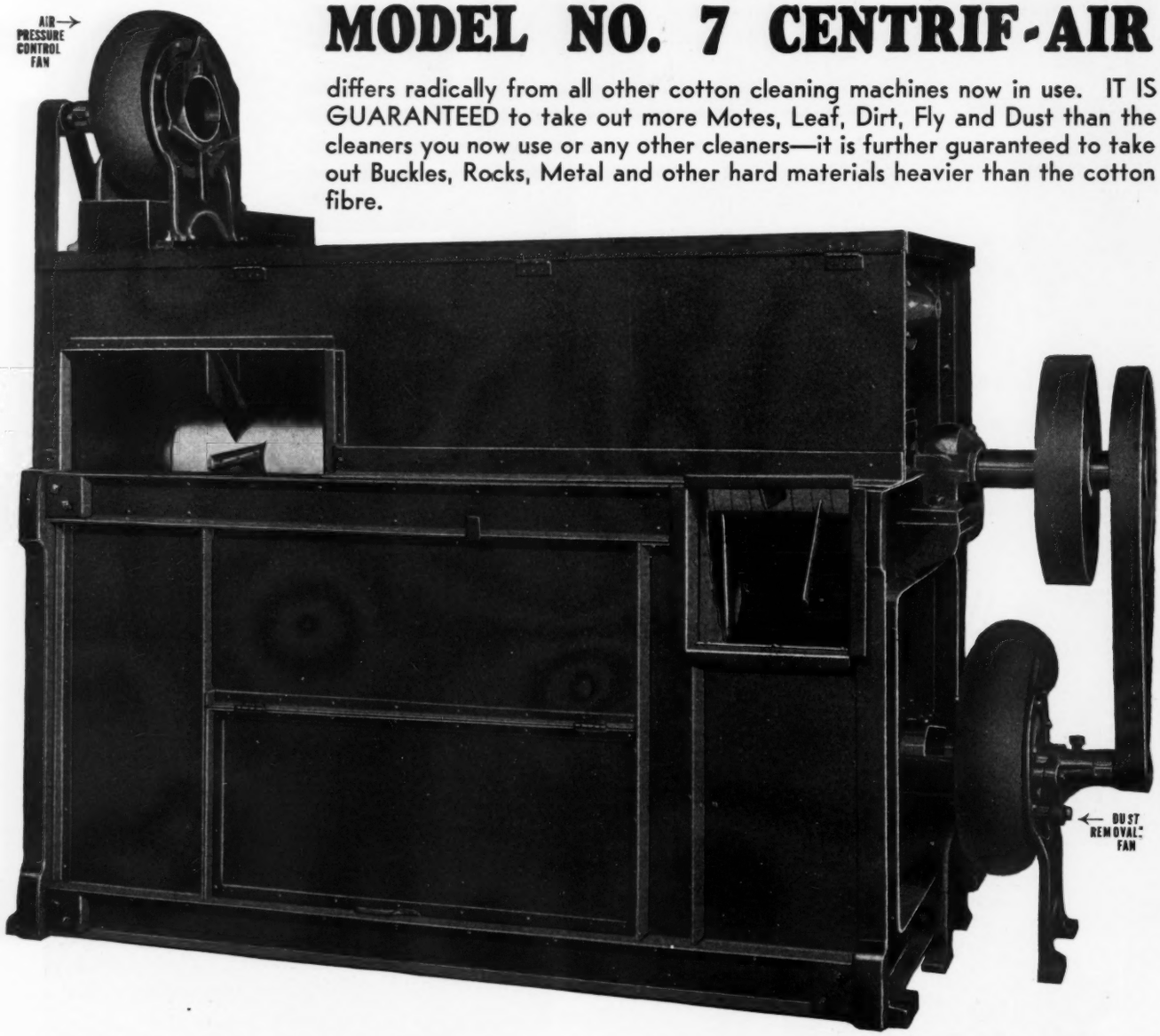
We are specialists over the broad range of equipment for processing Cotton, Woolen, Worsted, Rayon Silk and Waste Fibres. Bring your machinery problems to us.

WHITIN MACHINE WORKS WHITINSVILLE, MASS.
CHARLOTTE, N. C. - ATLANTA, GA.

A New Development in Cotton Cleaning!

MODEL NO. 7 CENTRIF-AIR

differs radically from all other cotton cleaning machines now in use. IT IS GUARANTEED to take out more Motes, Leaf, Dirt, Fly and Dust than the cleaners you now use or any other cleaners—it is further guaranteed to take out Buckles, Rocks, Metal and other hard materials heavier than the cotton fibre.



EXAMINE your present cleaning machines and you will find that Air Suction is pulling motes, etc., back into the cotton after they have been thrown out by the beaters, the suction operation actually interfering with the cleaning.

The New Model No. 7 CENTRIF-AIR Cotton Cleaner operates under *Controlled Air Pressure* which helps with the opening, aerating and cleaning. The effects of controlled pressure operation are—1, The air admitted under pressure expands and helps to open, aerate and bloom the cotton; 2, It also exerts a pressure on the inner surface of the screen and in passing out and downward helps the beaters to throw out motes, etc.; 3, It also takes out small leaf particles, dust and fly which ordinarily are left in cotton and at the same time prevents motes, etc., being pulled back into the cotton.

We will be glad to have one of our Engineers call and explain the new Model 7 and show you how it can reduce your upkeep costs and improve the quality of your product. Write for further information.

The CENTRIF-AIR MACHINE CO., *Inc.*

Manufacturers of Adjustable Cotton Cleaning Systems and Automatic Rake Type Cotton Distributors.

858 ASHBY STREET, U. S. A. ATLANTA, GA.

WHAT ENGINEERS SAID

in telling about their choice of Hard Maple Flooring for Textile Mills

"Our 40 years of experience as designing engineers of textile mills has shown that for this class of buildings the Maple top floor has a long life and low maintenance cost."

CHAS. T. MAIN, INC.,
Engineers,
BOSTON

"The generally excellent qualities of Maple Flooring have made it the standard finish for industrial floors."

ROBERT & COMPANY, INC.,
Architects & Engineers,
ATLANTA

"Maple Flooring is a standard specification with us for textile manufacturing building — it is the best floor surface we know of to meet all the conditions encountered."

J. E. SIRRINE & COMPANY,
Engineers,
GREENVILLE, S. C.

"The many excellent qualities of Hard Maple Flooring have made it the standard flooring material for the textile industry."

LOCKWOOD GREENE ENGINEERS, INC.,
New York – Boston – Spartanburg

SUCCESSFUL experience with Northern Hard Maple over a long period of years is most frequently the reason for architects' and engineers' choice of Maple for textile mill floors.

These experienced appraisers of value know that tough-fibred, tight-grained Hard Maple withstands heavy usage—retains its smoothness, despite the pounding of heavy trucks—that resilient, warm and dry, it reduces fatigue—creates no dust to injure bearing surfaces of machinery — simplifies plant alterations — and that, it is remarkably easy to keep clean and free from lint. New, penetrating, heavy-duty finishes seal the surface and eliminate scrubbing—require only brushing. (Also available are preservative types which resist the effects of dampness.)

These qualities—combined in no other flooring material—make Northern Hard Maple unequalled in economy of installation and maintenance. It may be laid in blocks or strips, with or without pattern, over screeds, wood, or concrete sub-floors.

As your engineer will tell you, you build for the years when you floor with MFMA* Northern Hard Maple. Write for grading rules and complete specifications for laying and finishing.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Ill.

See our catalog data in Sweet's, Sec. 15/53. Let our service and research department assist you with your flooring problems. Write us.

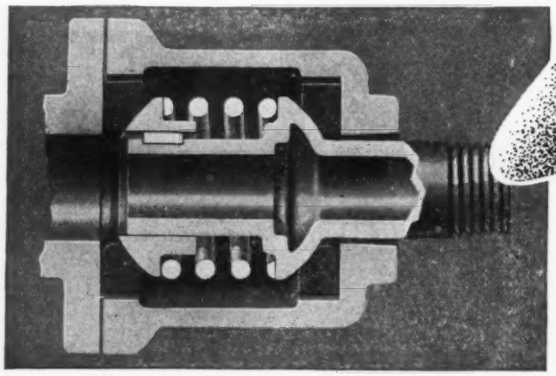
Floor *with* Maple

*The letters **MFMA** on Maple, Beech or Birch Flooring signify that the flooring is standardized and guaranteed by the Maple Flooring Manufacturers Association, whose members must attain and maintain the highest standards of manufacture and adhere to manufacturing and grading rules which economically conserve these remarkable woods. This trade-mark is for your protection. Look for it on the flooring you use. **MFMA**

MFMA Approved

Two BIG STEPS Ahead

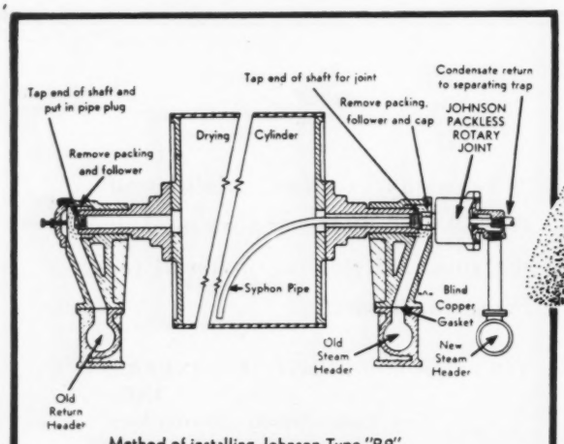
In Dry Can Operating Efficiency



1 The Johnson Joint

—to eliminate all stuffing box troubles

● This step rings down the curtain on stuffing box troubles. Note that the Johnson Rotary Joint merely consists of the two spherical-end members which are held against two carbon-graphite rings by the force of the pressure within the housing. There is no packing of any kind. The ring at the left serves as a bearing—the ring at the right as a pressure seal. Since the pressure does its OWN sealing the joint is self-adjusting to any pressure. The carbon-graphite rings are self-lubricating and last indefinitely. The ball-and-socket design, and provision for lateral mis-alignment, also makes the joint completely self-aligning. Hundreds of installations have shown the immeasurable superiority of this packless, self-oiling, self-aligning, self-adjusting joint. You take a big step when you install Johnson Joints, and you make another big gain when you adopt:



Method of installing Johnson Type "B2" Rotary Pressure Joints on Dry Cans.

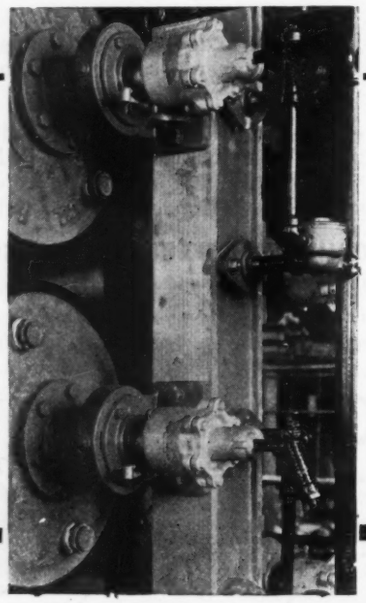
2 The Johnson Method

—for complete removal of water and air

● This step rings down the curtain on heat losses and delayed production schedules. The method of installation is shown opposite. In this type of installation the Johnson Rotary Joints are provided with a syphon pipe connection which is drained by an inverted bucket, non air-binding trap. The opposite or "discharge" end of the shaft is plugged and the old steam header sealed off. When dry cans are equipped in this way, by-passes and interaction are eliminated and cans are ready to operate five or ten minutes after steam is turned on.

Ask for complete details covering Johnson Joints and methods of installation on slashers, calenders and steam heated rolls.

THE JOHNSON CORPORATION, 815 Wood St., Three Rivers, Mich.



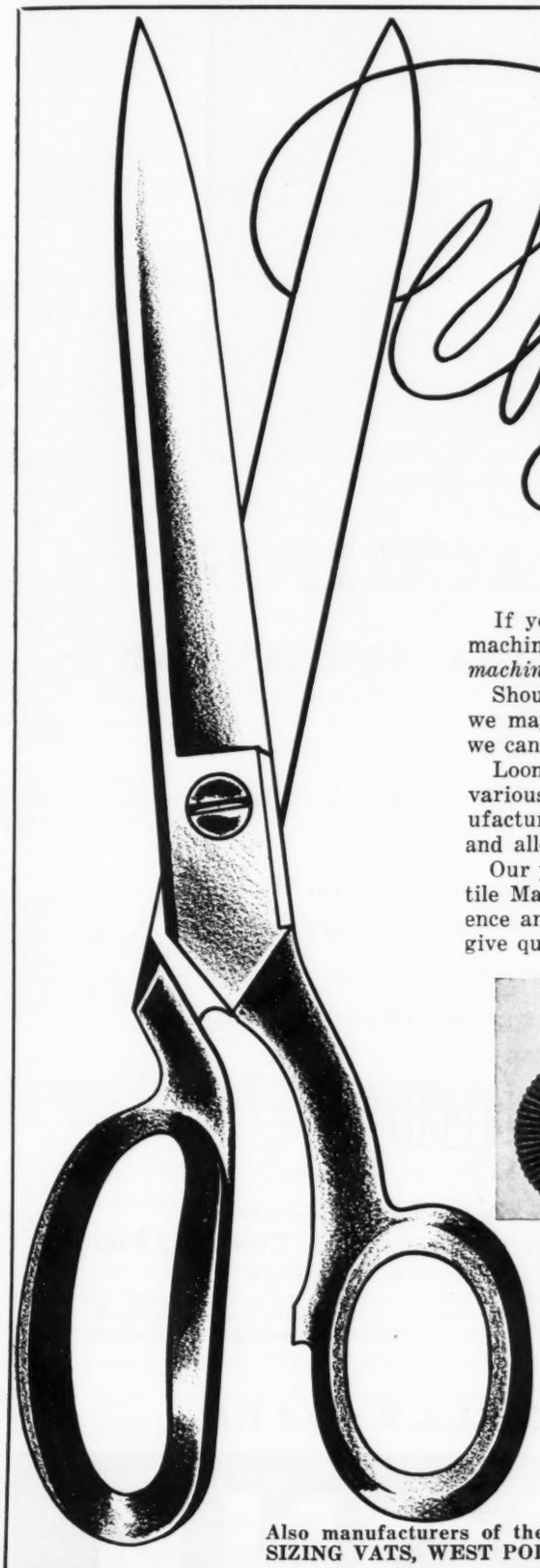
Johnson Joints installed on Dry Can manufactured by the Textile Finishing Machinery Co.

● **Endorsed by leading Textile Machinery Manufacturers**

These manufacturers either use Johnson Joints as standard or will furnish them on specification:

H. W. Butterworth & Sons Co.
Saco Lowell Shops
The Textile Finishing Machinery Company
John Waldron Corporation
Morrisson Machine Co.
Van Vlaanderen Machine Co.
Cocker Machine & Foundry Co.
Frank P. Davis Co.
B. F. Perkins & Son Co.

Johnson
Rotary PRESSURE JOINT



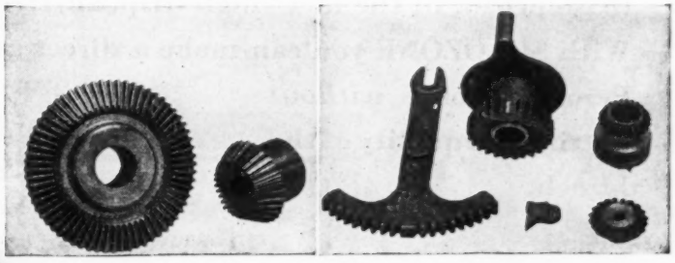
Tailor made Parts and Equipment

If you need anything special to supplant a worn section of a machine or increase its efficiency, *or if you want an entire new machine*, we can "tailor make" it for you.

Should a standard part or a gear of a textile machine break, we may have it in stock ready to be shipped at once. If not, we can make a new one in a very short time.

Loom parts, spinning frame parts, pump parts, card parts, and various other miscellaneous parts for textile machinery are manufactured by us from iron, steel, brass, bronze and other metals and alloys.

Our plant may be properly termed "A Service Station for Textile Machinery." With our splendid facilities, equipment, experience and large stock of patterns, we are in excellent position to give quick and satisfying service.



SPECIAL MACHINERY MADE FOR EXCLUSIVE USE

You may have need for special machinery or parts. We can help you perfect and produce them for your exclusive use, as we have for a number of other mills. Our Engineering Department can furnish designs of our own or work out yours.

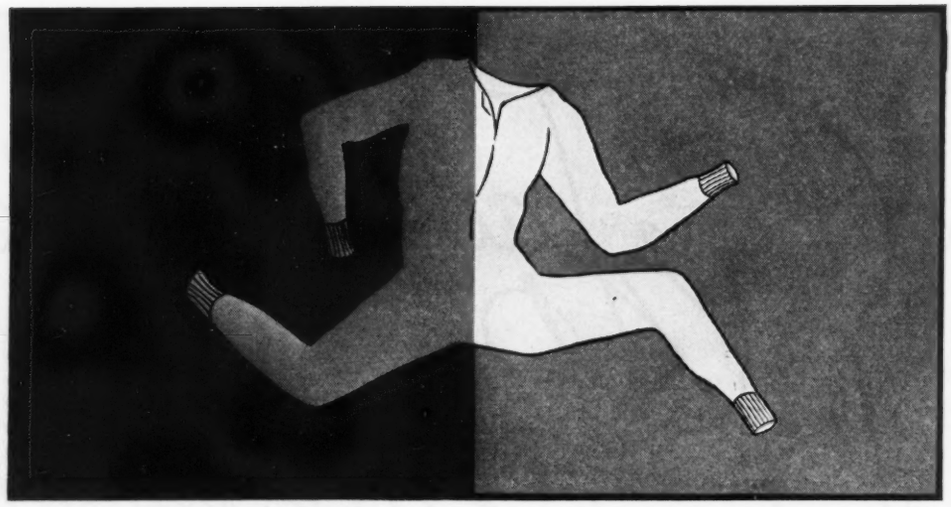
"Nothing too large or perplexing; nothing too small or intricate."

Also manufacturers of the WEST POINT SPIRAL GEARS, WEST POINT SIZING VATS, WEST POINT LOOM BEAMS, and other textile machinery.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA



QUALITY BLEACHING

at *lowest* cost for PEROXIDE

Use SOLOZONE for economical Peroxide bleaching of knit goods, yarn-dyed shirtings and other fabrics. Contains 20% available bleaching oxygen, more bleaching oxygen than any other commercial Peroxide, yet sells at only 17 cents a pound (base price), in the new single-trip, all-steel convenient packages. With SOLOZONE you can make a direct saving of 25% or 30% on Peroxide costs *without* cutting the quality of the bleach.

DU PONT
REG. U. S. PAT. OFF.

A call or letter to the nearest district office will bring you complete information.

The R. & H. Chemicals Department
E. I. DU PONT DE NEMOURS & COMPANY, INC.
WILMINGTON, DELAWARE

District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco.

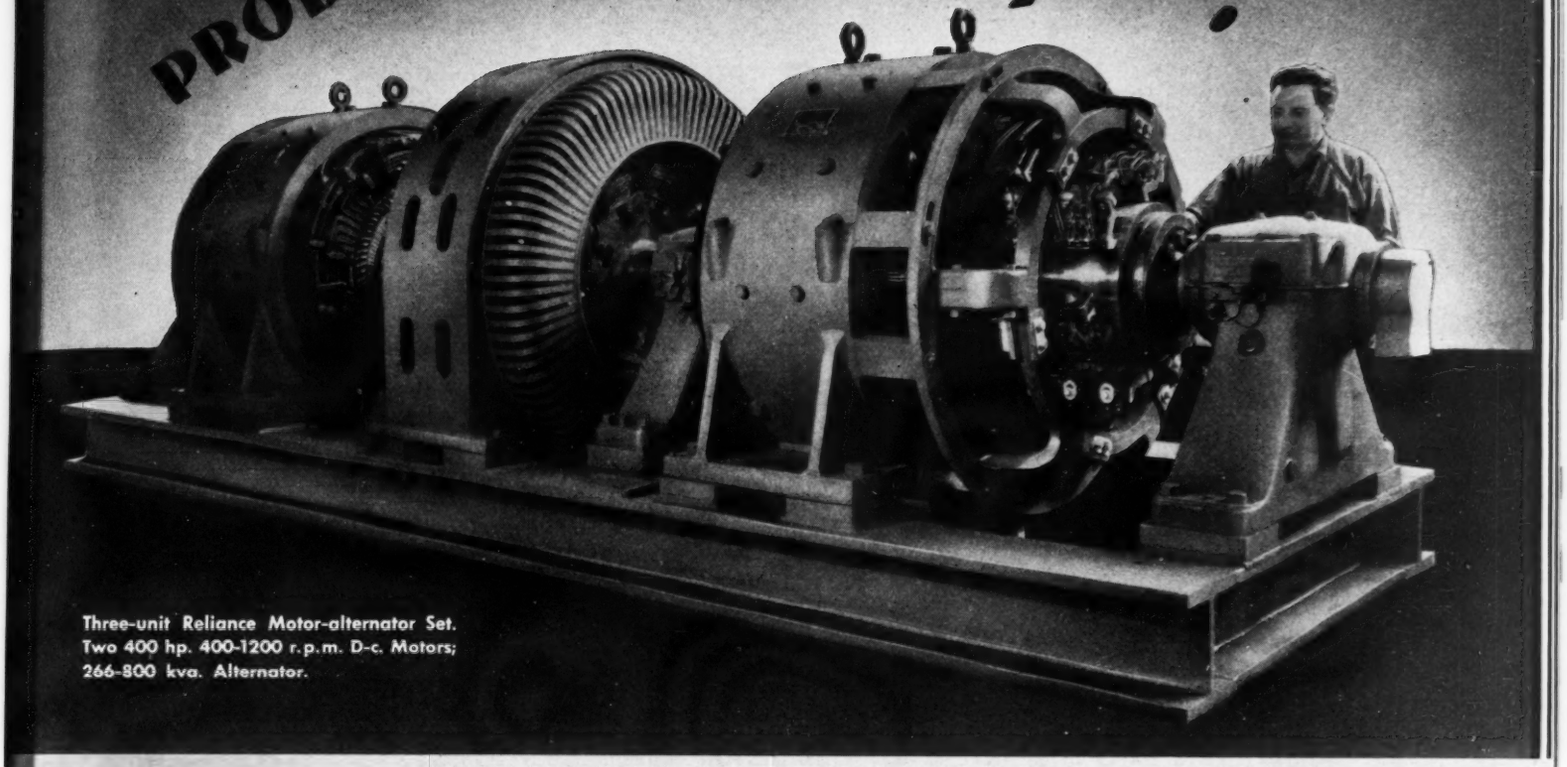
BLEACH ECONOMICALLY WITH

SOLOZONE

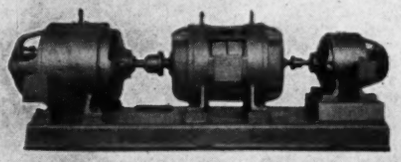
REG. U. S. PAT. OFF.

DU PONT SODIUM PEROXIDE

PRODUCTION UNITS ? Yes!

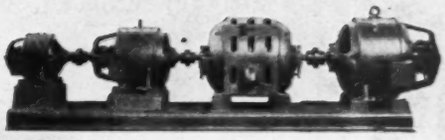


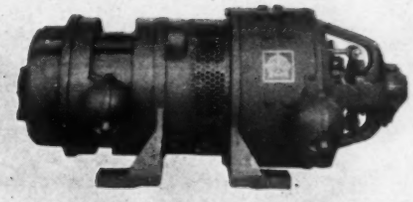
Three-unit Reliance Motor-alternator Set. Two 400 hp. 400-1200 r.p.m. D-c. Motors; 266-800 kva. Alternator.



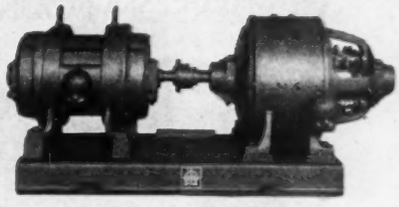
Three-unit set—50 hp. squirrel-cage a-c motor; 30 kw. d-c. generator; 3 kw. exciter. Flexible couplings, ball bearings.

Four-unit set—100 hp. a-c. synchronous motor; two d-c. generators 40 kw., 20 kw.; 5 kw. exciter. Flexible couplings, ball bearings.





Single-unit, two-bearing set, d-c. generator, a-c. motor. Sleeve bearings. For sizes up to 5 kw.



Type "T" D-c. Generator, driven by Type "AA" Squirrel-cage Motor. Base is heavy steel plate, electrically welded, with reinforcing ribs on under side.

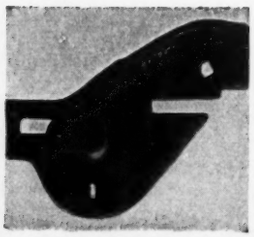
Yes! motor-generator sets like these are playing a very prominent part in production processes. The large set above provides a-c. power at various frequencies so that individual roller motors of a run-out table in a strip steel mill can be operated over a 3-to-1 speed range . . . The 4-unit set supplies power for d-c. motors of two "range" or tandem drives in a textile mill. From a single rheostat which varies the voltage of each generator the speeds of all motors in a "range" can be adjusted simultaneously . . . In short, Reliance Motor-generator Sets enable plants with an a-c. power supply to obtain wide ranges of operating speeds with convenience and flexibility of control. Capable Sales Engineers in our branch offices will aid you in simplifying driving parts, improving quality and cutting costs.

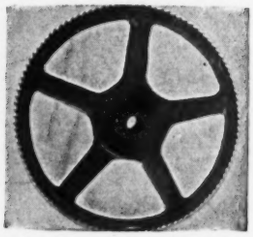
RELIANCE ELECTRIC & ENGINEERING COMPANY
1088 IVANHOE ROAD CLEVELAND, OHIO

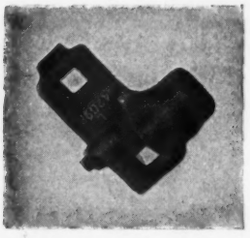
Branches: Birmingham, Boston, Buffalo, Chicago, Cincinnati, Detroit, New York, Philadelphia, Pittsburgh. *Representatives in other principal cities.*

RELIANCE A-C D-C MOTORS

√O.K.







CHECK up on any Henderson Textile Repair Part taken at random in our large stocks. You'll find it true and accurate because it is made from a precision pattern to fit perfectly.

Check up on the durability of any Henderson Part in any mill and you'll find that they last longer under higher speeds and strenuous operation. This is because we have searched out the weak spots in ordinary textile parts and have made Henderson parts stronger at these points. It is because Henderson workmen take pride in producing parts that not only fit perfectly but will help to strengthen and increase the efficiency of the machine they are used on.

Henderson Textile Repair Parts have been checked and O. K.'d by many of the leading textile mills who demand better parts to decrease unnecessary breakdowns, lower maintenance costs and insure more efficient operation under high-speed production.

Why don't YOU check up on Henderson parts?

HENDERSON FOUNDRY & MACHINE WORKS, HAMPTON, GA.

HENDERSON
TEXTILE REPAIR PARTS

TUFFER Card Clothing comes

to you with Points Carefully Ground

Starting with the finest quality of card wire made from Swedish Steel rods, TUFFER Card Clothing is handled in the grinding room by long experienced craftsmen. Accurate adjustments are made to allow the correct amount of abrasion to hit all the points uniformly. Another set of grinder rolls set to precision standards removes any roughness or burrs that might be on the points. Each grinding machine is in the capable hands of expert grinders who constantly watch and check every detail. With height and pitch gauges, they keep every inch to required specifications. As an extra safeguard, the Grinding Room Foreman makes a final inspection and examination.

A Boss Carder recently wrote:

"I never grind any 'TUFFER' Card Clothing when I first put it on, it comes so uniform and even, with such an excellent point, that it is not necessary to grind it."

Be ready for the upturn in business with your machines equipped with TUFFER Card Clothing.

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.
CARD CLOTHING

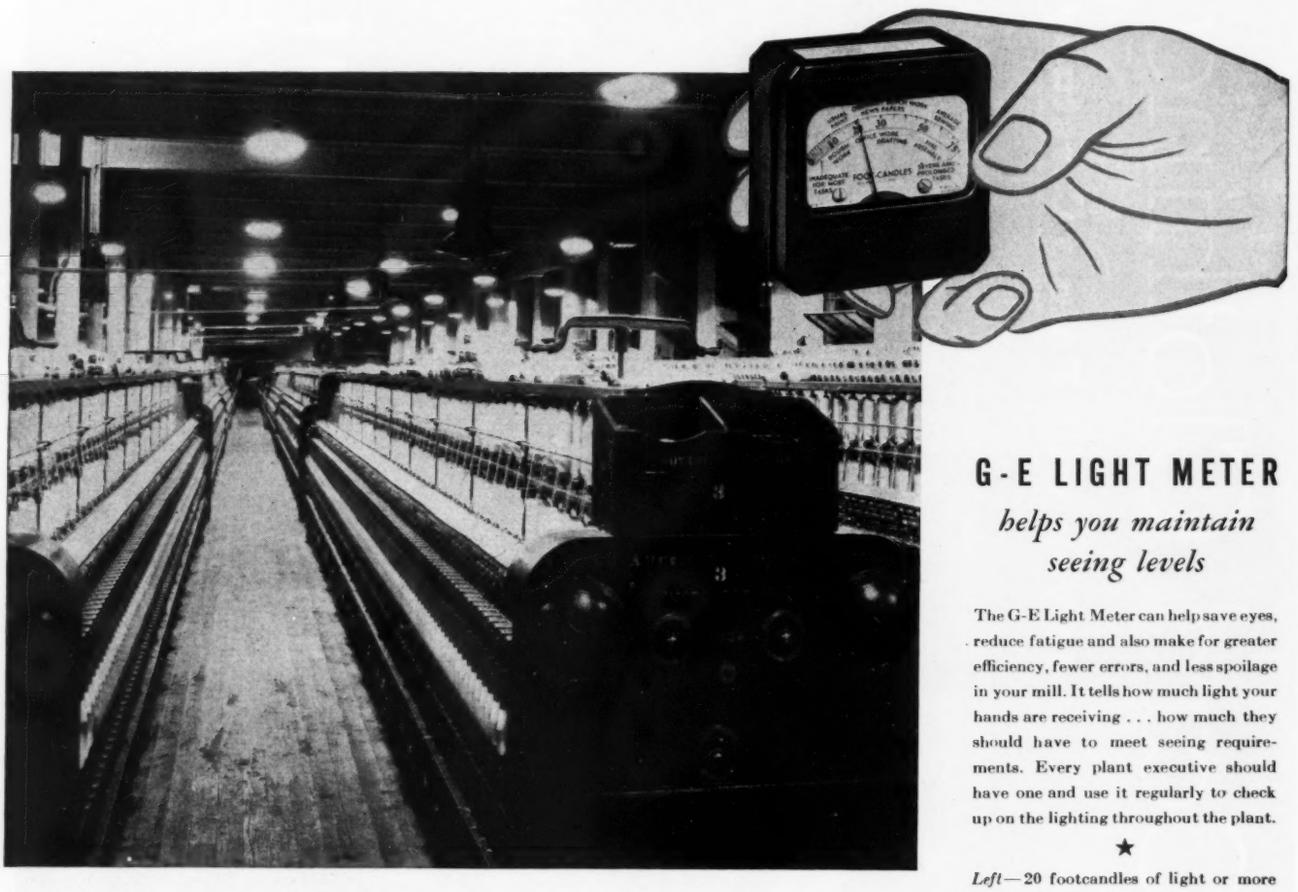
HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plant: 244 Forsythe St., Atlanta **Branch Offices:** Philadelphia, Dallas

Products: Fillets for Feed Rolls, Lickerins, Tumblers, Strippers, Workers, Doffers, Fancies, and Cylinders, Doffer Rings, Napper Clothing, Strickles, Emery Fillets, Burnisher Fillets, Top Flats Recovered and extra sets loaned, Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant. Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted Eye and Regular Wire Heddles

How the G-E LIGHT METER *can help save men and money in textile mills*



G-E LIGHT METER

helps you maintain seeing levels

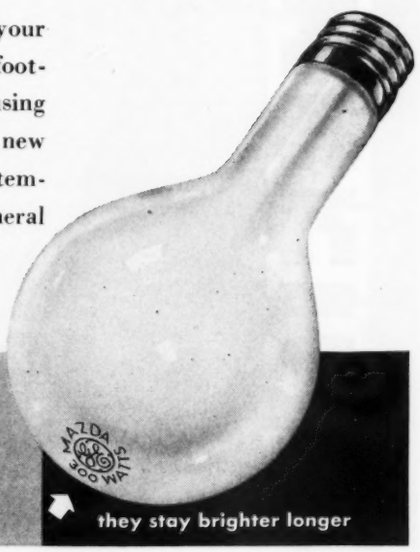
The G-E Light Meter can help save eyes, reduce fatigue and also make for greater efficiency, fewer errors, and less spoilage in your mill. It tells how much light your hands are receiving . . . how much they should have to meet seeing requirements. Every plant executive should have one and use it regularly to check up on the lighting throughout the plant.

★

Left—20 footcandles of light or more are recommended for the severe seeing work required in maintaining textile machine operations. It is important that such levels of light be maintained month in and month out. Periodic check-ups with a G-E Light Meter will help.

GOOD LIGHTING lessens fatigue and gives textile mill employees added stimulus. Because it helps them see better, it also produces a direct increase in working speeds, steps up production, and decreases spoilage.

The new G-E Light Meter quickly tells whether the various departments in your plant are well lighted or not. It also indicates the minimum recommended footcandles for different seeing tasks. Every business executive interested in using better lighting to save men and money in his plant should have one of these new G-E Light Meters. It measures light as simply as a thermometer measures temperature and sells for only $11.50. For further information, write to General Electric Company, Department 166, Nela Park, Cleveland, Ohio.



GENERAL ELECTRIC
MAZDA LAMPS

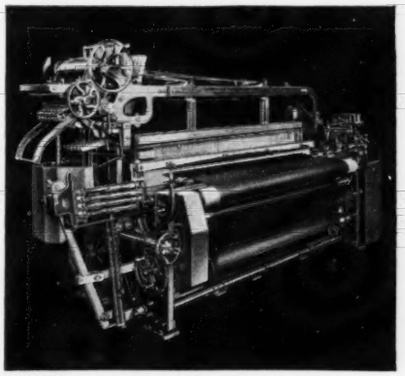
they stay brighter longer

CROMPTON & KNOWLES OFFERS:

a loom for every woven fabric

Although we make many special looms for the weaving of many types of fabrics, the great majority of our product is divided into these three branches of our "New Family of Looms":—

WORSTED & WOOLEN (W)

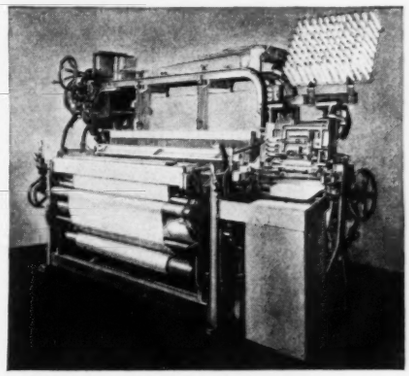


Type W-2—a 20-harness loom, newly designed throughout and built along automotive principles with finished surfaces, roller bearings and precision construction. The box capacities, 2 x 1 and 4 x 1 automatic, and 4 x 4 non-automatic.

Type W-3—a 26-harness loom built along similar principles to the W-2 High Speed Worsted and Woolen loom, but stronger and heavier. Box capacities 4 x 1 automatic and 4 x 4 non-automatic.

(Both of these looms are built "convertible"—they can be changed with a minimum of effort from 4 x 1 box automatic to 4 x 4 box non-automatic for pick and pick work.)

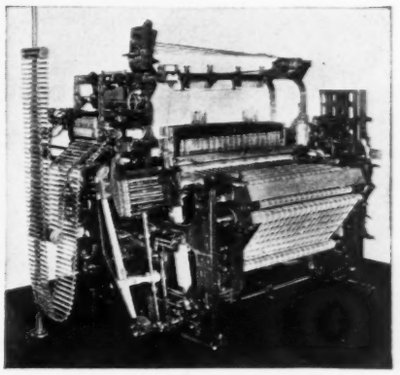
SILK & RAYON (S)



Type S-1, S-3—built with either a 6-harness undercam, 16-, 20- or 25-harness dobby, or 16-, 20- or 25-harness intermediate head harness motion. Box capacities are 2 x 1 or 4 x 1 non-automatic (S-1), or 2 x 1 shuttle changing (S-3).

Type S-4—a 4 x 1 box loom, 75% automatic, with the shuttle changer operating on the top two shuttles and the feeler indicating filling depletion on the bottom two. Same harness capacities as above.

COTTON (C)



C-3 Terry Towel—a high speed, automatic bobbin changing loom more rugged and heavier than its predecessors. Handles maximum roll of cloth 22″ in diameter, 24″ diameter terry and ground beams, and a bobbin 8¾″ long by 1⅝″ diameter when wound. Built in the undercam, dobby or jacquard construction.

C-3, C-4 Dobby Loom—the former handles a maximum harness capacity of 20-harness, ⅜″ gauge, and the latter 25-harness, ½″ gauge. Built 2 x 1 or 4 x 1 box, automatic bobbin changing type. The dobby is our latest type No. 6 and built single or double cylinder. Permits of high speed, large filling package, beam and cloth roll. These C-3 and C-4 looms can be built in the undercam and jacquard constructions also.

C-3, C-4 Intermediate Head Loom—designed for handling narrow pants goods, etc. 16-harness drop box or 20-harness plain heads maximum capacity for C-3 loom while the C-4 loom will handle a 25-harness drop box head. Either 2 x 1 or 4 x 1, latter requires drop box head. High speed, large filling package; beam and cloth roll are obtainable in these looms also.

SUPPLY PARTS

We have always recommended "C & K supply parts for C & K Looms," and for the convenience of our customers we maintain warehouses in Worcester, Philadelphia and Charlotte. In these warehouses we carry in stock the items most often called for.

CROMPTON & KNOWLES LOOM WORKS

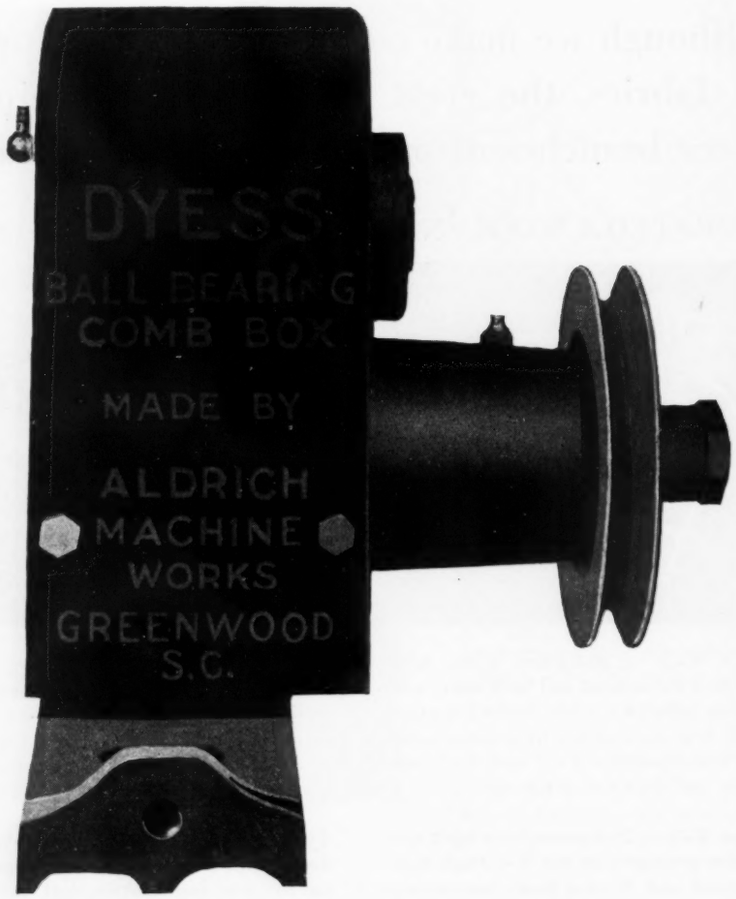
Allentown Philadelphia **WORCESTER, MASSACHUSETTS** Charlotte, North Carolina

CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

SOME OF THESE SHOULD ALWAYS BE ON HAND IN EVERY COTTON MILL SUPPLY ROOM

Clean! Quiet! Cool!

No Drip - No Spatter - No Rattle



Old, worn-out comb boxes waste oil and are a constant expense.

Their perpetual dripping of oil on the floor is a menace to safety.

Their spattering injures the card clothing, and stains the work.

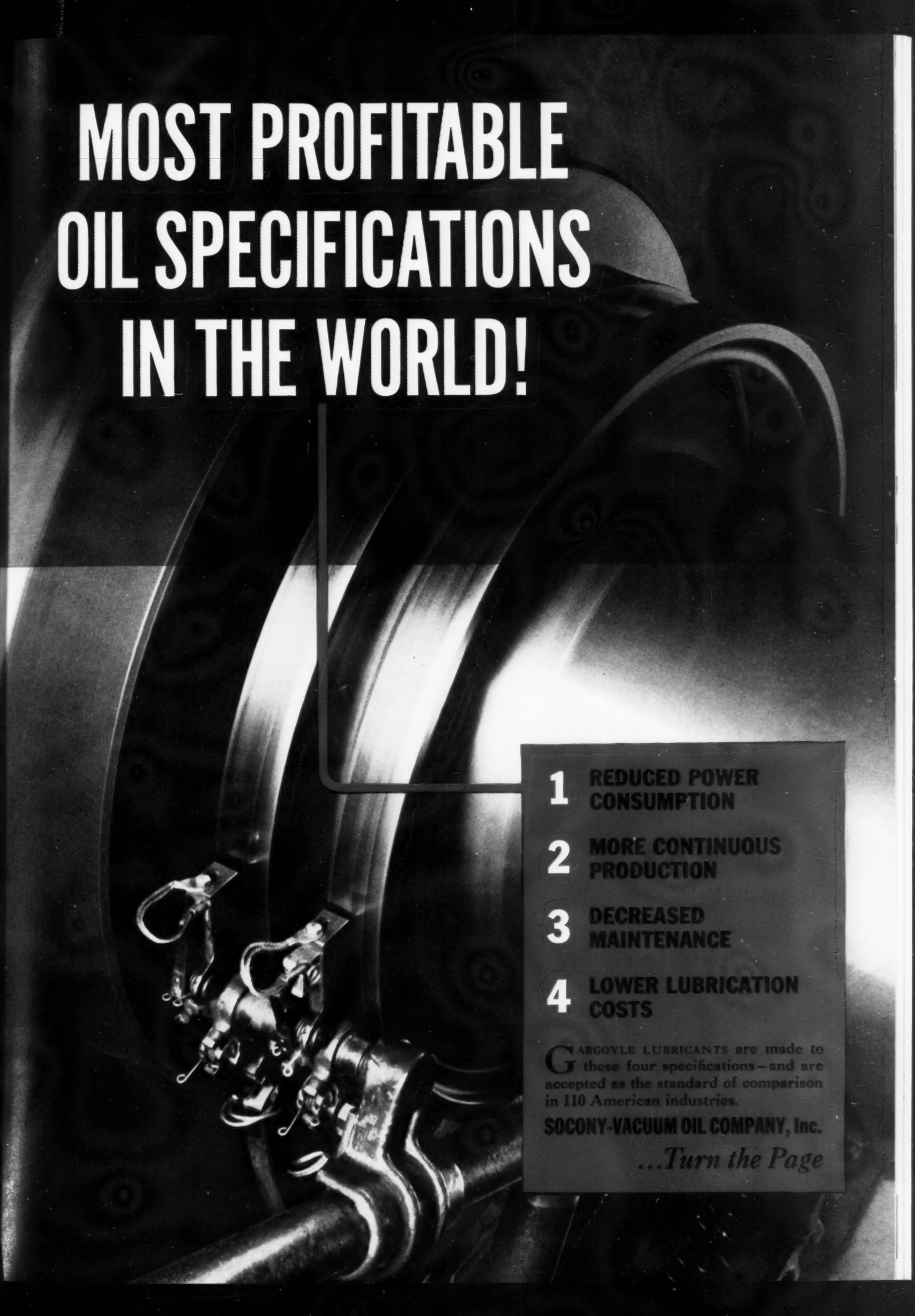
Dyess Comb Box with cover removed

Replace them with new ball bearing comb boxes kept on hand always in the supply room.

Made by

ALDRICH MACHINE WORKS

Greenwood, South Carolina


MOST PROFITABLE
OIL SPECIFICATIONS
IN THE WORLD!
1 REDUCED POWER CONSUMPTION
2 MORE CONTINUOUS PRODUCTION
3 DECREASED MAINTENANCE
4 LOWER LUBRICATION COSTS
GARGOYLE LUBRICANTS are made to these four specifications—and are accepted as the standard of comparison in 110 American industries.
SOCONY-VACUUM OIL COMPANY, Inc.
...Turn the Page

TO BOOST UNIT RETURN

Give your men the advantage of Socony-Vacuum's 70 years' experience

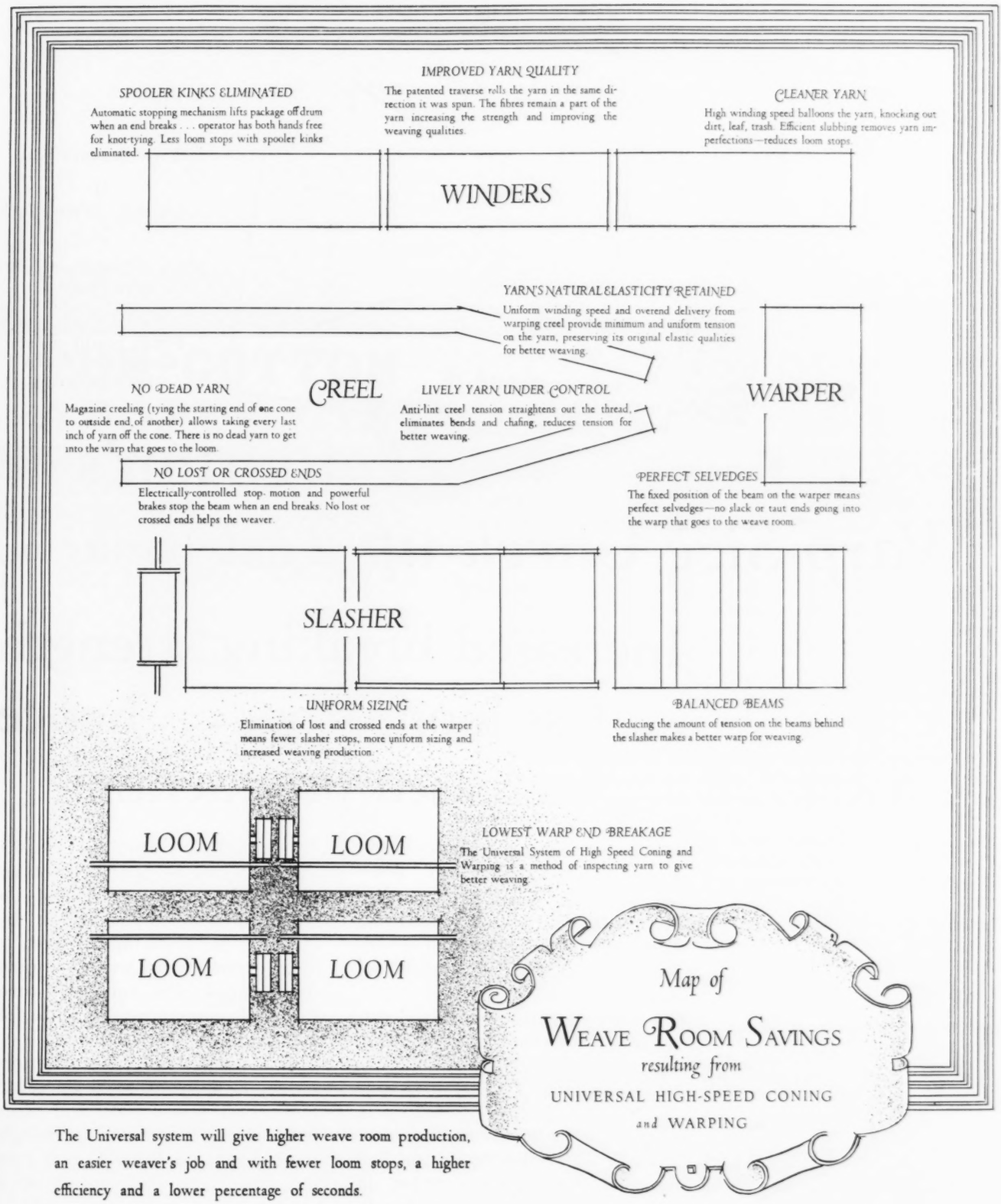
EXPERIENCED TEXTILE MEN say Correct Lubrication—the kind Socony-Vacuum gives—is an "incentive" for production machinery.

For 70 years Socony-Vacuum engineers have aided mills to use the right oil, the right way, in the right place. Today, this practical experience plus the high quality of Socony-Vacuum lubricants is recognized by America's leading mills as a vital aid to low production costs. Your men can use them profitably. Talk this over with the Socony-Vacuum representative.

14

SOCONY-VACUUM OIL CO.
INCORPORATED

STANDARD OIL OF NEW YORK DIVISION · WHITE STAR DIVISION · LUBRITE DIVISION · WHITE EAGLE DIVISION
WADHAMS OIL COMPANY · MAGNOLIA PETROLEUM COMPANY · GENERAL PETROLEUM CORPORATION OF CALIFORNIA

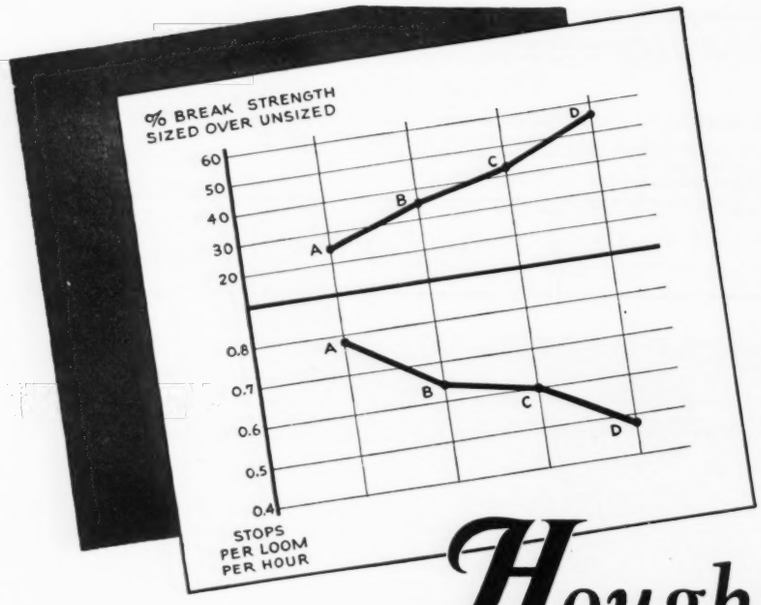

IMPROVED YARN QUALITY
SPOOLER KINKS ELIMINATED
Automatic stopping mechanism lifts package off drum when an end breaks . . . operator has both hands free for knot-tying. Less loom stops with spooler kinks eliminated.
The patented traverse rolls the yarn in the same direction it was spun. The fibres remain a part of the yarn increasing the strength and improving the weaving qualities.
CLEANER YARN
High winding speed balloons the yarn, knocking out dirt, leaf, trash. Efficient slubbing removes yarn imperfections—reduces loom stops.
WINDERS
YARN'S NATURAL ELASTICITY RETAINED
Uniform winding speed and overend delivery from warping creel provide minimum and uniform tension on the yarn, preserving its original elastic qualities for better weaving.
NO DEAD YARN
Magazine creeling (tying the starting end of one cone to outside end of another) allows taking every last inch of yarn off the cone. There is no dead yarn to get into the warp that goes to the loom.
CREEL
LIVELY YARN UNDER CONTROL
Anti-lint creel tension straightens out the thread, eliminates bends and chafing, reduces tension for better weaving.
WARPER
NO LOST OR CROSSED ENDS
Electrically-controlled stop- motion and powerful brakes stop the beam when an end breaks. No lost or crossed ends helps the weaver.
PERFECT SELVEDGES
The fixed position of the beam on the warper means perfect selvedges—no slack or taut ends going into the warp that goes to the weave room.
SLASHER
UNIFORM SIZING
Elimination of lost and crossed ends at the warper means fewer slasher stops, more uniform sizing and increased weaving production.
BALANCED BEAMS
Reducing the amount of tension on the beams behind the slasher makes a better warp for weaving.
LOOM
LOOM
LOOM
LOOM
LOWEST WARP END BREAKAGE
The Universal System of High Speed Coning and Warping is a method of inspecting yarn to give better weaving.
Map of
WEAVE ROOM SAVINGS
resulting from
UNIVERSAL HIGH-SPEED CONING
and WARPING

The Universal system will give higher weave room production, an easier weaver's job and with fewer loom stops, a higher efficiency and a lower percentage of seconds.

UNIVERSAL IN 3 OUT OF 4 MILLS—MORE NET RETURN

WINDING COMPANY

BOSTON NEW YORK PROVIDENCE SPRINGFIELD UTICA CHARLOTTE ATLANTA



A
With Former Size

B
After mill's own check

C
First Houghton Improvement

D
Final result after Houghton Warp Size Check-up

Houghton's Warp Size Check-up Test results in:

Increased breaking strength ... less loom stops ... hence increased production

The graphs above are made from a mill's own time study, after our Research Staff had made a Warp Size Check-up Test and recommended new formulae and procedure which were put into practice.

Formerly the mill had .792 loom stops per hour on 51 looms. This was reduced to .66 stops per hour by mechanical repairs and size ton Research is ready to help you. Then Houghton took hold; our first advice resulted in increase in breaking strength of from 38% to 42.5% over the unsized warp. Not yet satisfied, we further studied the situation, and succeeded in increasing the breaking strength to 55.5% over unsized warps — more than double the former figure. Result: Loom stops reduced to.488 per hour.

This meant less fatigue, more money to the piece-work operator, more mill production, and more profit in the weave room. Houghton Research is ready to help you, too. Send us the coupon as a starter.

Send to 240 W. Somerset St., Philadelphia, Pa.

Houghton:

Tell me more about the Warp Size Check-up Test.

Name ----------

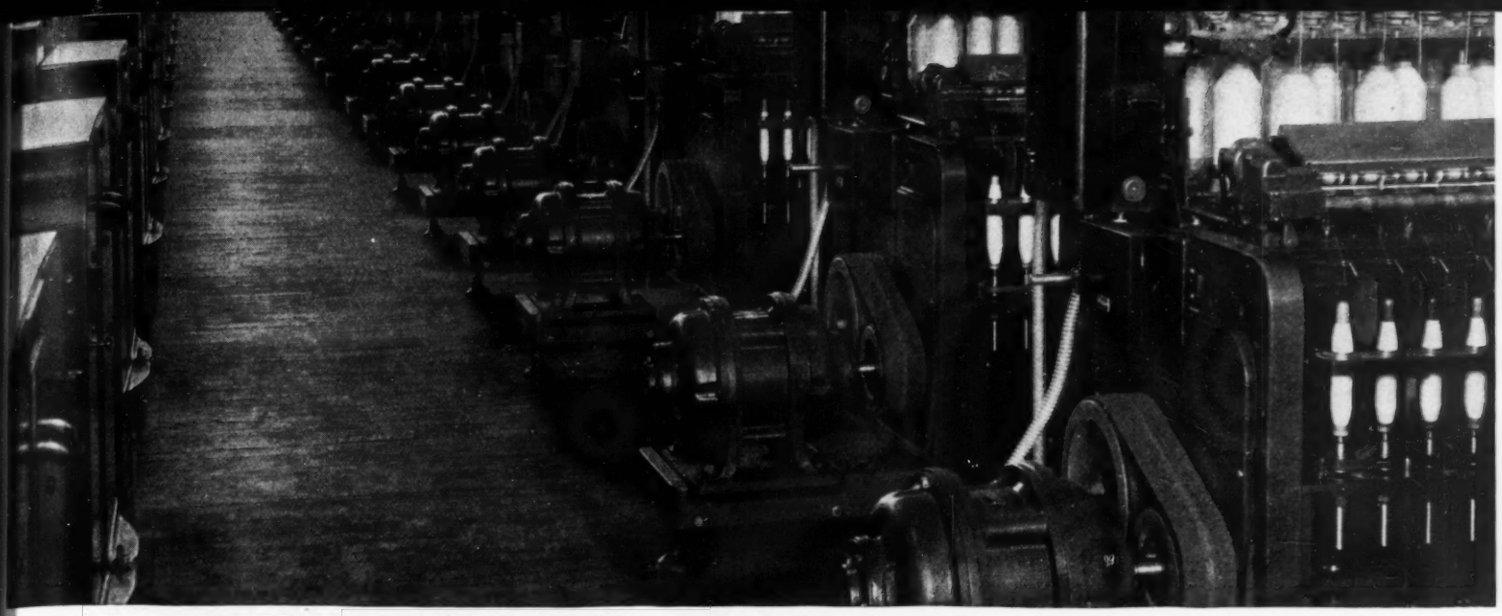
Company ----------

Street ----------

City ----------

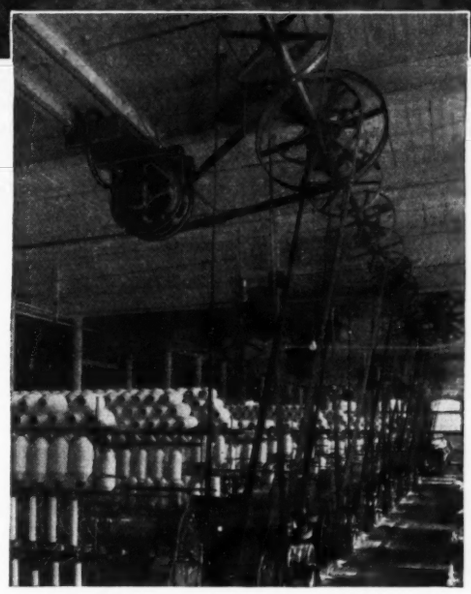
E. F. HOUGHTON & CO.

Charlotte — PHILADELPHIA — Chicago



THE COTTON TEXTILE INDUSTRY ADOPTS THE ROCKWOOD DRIVE

Rockwood special spinning frame drives at Brandon Corp., Woodruff, S. C.



No. 8 ceiling type Rockwood Drive to twister frame lineshaft in Washington Mills, Fries, Virginia. Reduces maintenance, saves on power, gives freedom from annoying drive trouble. This is the now famous Rockwood "no maintenance" ceiling drive that is used so extensively in textile mills.

FROM the standpoint of . . . driven machine performance . . . uniformity of speed . . . savings in power . . . elimination of maintenance troubles . . . quality of work done . . . Rockwood Drives have proven far superior in the textile industry.

They insure increased output and a better quality of work because they automatically maintain uniform belt tensions, regardless of continual changes in the lengths of belts. Thus the flow of power is smoother and dependable.

They decrease power consumption as each Rockwood Drive is adjustable so that the minimum belt tension needed to handle the load is the tension used. Savings in bearings and motor repairs, as well as in power bills, results.

They give a freedom from drive troubles and annoyances that plant men are enthusiastic about. Almost no belt take-ups. Automatically the pivoted motor adjusts itself to the belt length.

Rockwood Drives are supplied in several types for textile mill machinery. In addition to the "no maintenance" ceiling type Rockwood Drive that is used so extensively—and standard floor bases for general machine applications—Rockwood makes Vertical bases for "up" and "down" drives and four distinct types of spinning frame drives. Any desired arrangement thus is available. There also are several new loom drives recently developed of which we expect much.

•

• If you are buying new machinery . . . or re-arranging old machines . . . it will pay you to have a Rockwood engineer call. He will be glad to point out the savings you can make.

ROCKWOOD
PAPER PULLEYS
They put calks on horse shoes
so the horse will not slip
A slipping belt is no more effective than a slipping horse. A belt to do work must GRIP and not SLIP on the pulleys. Rockwood paper pulleys grip a belt as no other pulley possibly can. This is why it is always a saving to use Rockwood paper pulleys on BOTH ENDS of your drives. Made in all sizes, for motors and Driven machinery—solid and split.

The Rockwood Manufacturing Company
1800 ENGLISH AVENUE • INDIANAPOLIS, IND.
Division of General Fibre Products, Inc.

GILLEATHER

Is the Best Covering for

TOP ROLLS

The great majority of the American Cotton Mills spinning quality yarns are covering their top rolls with GIL-LEATHER. Naturally they try out the feasible substitutes but they continue to spin on GILLEATHER because it spins the best and strongest yarn and is always dependable. No other covering is as dependable as GILLEATHER.

SPIN YOUR YARN ON GILLEATHER, THE LONGEST WEARING, DEPENDABLE ROLLER COVERING.

GILL LEATHER COMPANY

SALEM, MASS.

REPRESENTATIVES:

Gastonia, N. C., W. G. Hamner. *Griffin, Ga., Belton C. Plowden.*
Greenville, S. C., Ralph Gossett. *Greenville, S. C., W. J. Moore.*
Dallas, Texas, Russell A. Singleton.

Advantages:

Roving protected against damage.

◆

Shorter cleaning intervals.

◆

Cyclonic Action cleans efficiently.

◆

Covers more frames.

◆

Velocity adjusted to desired area.

◆

Unit cannot jump track.

◆

No condensation from humidifiers.

A swirling column of air circulates freely between the bobbins with the highest velocities directed around the roll stand and the guides.

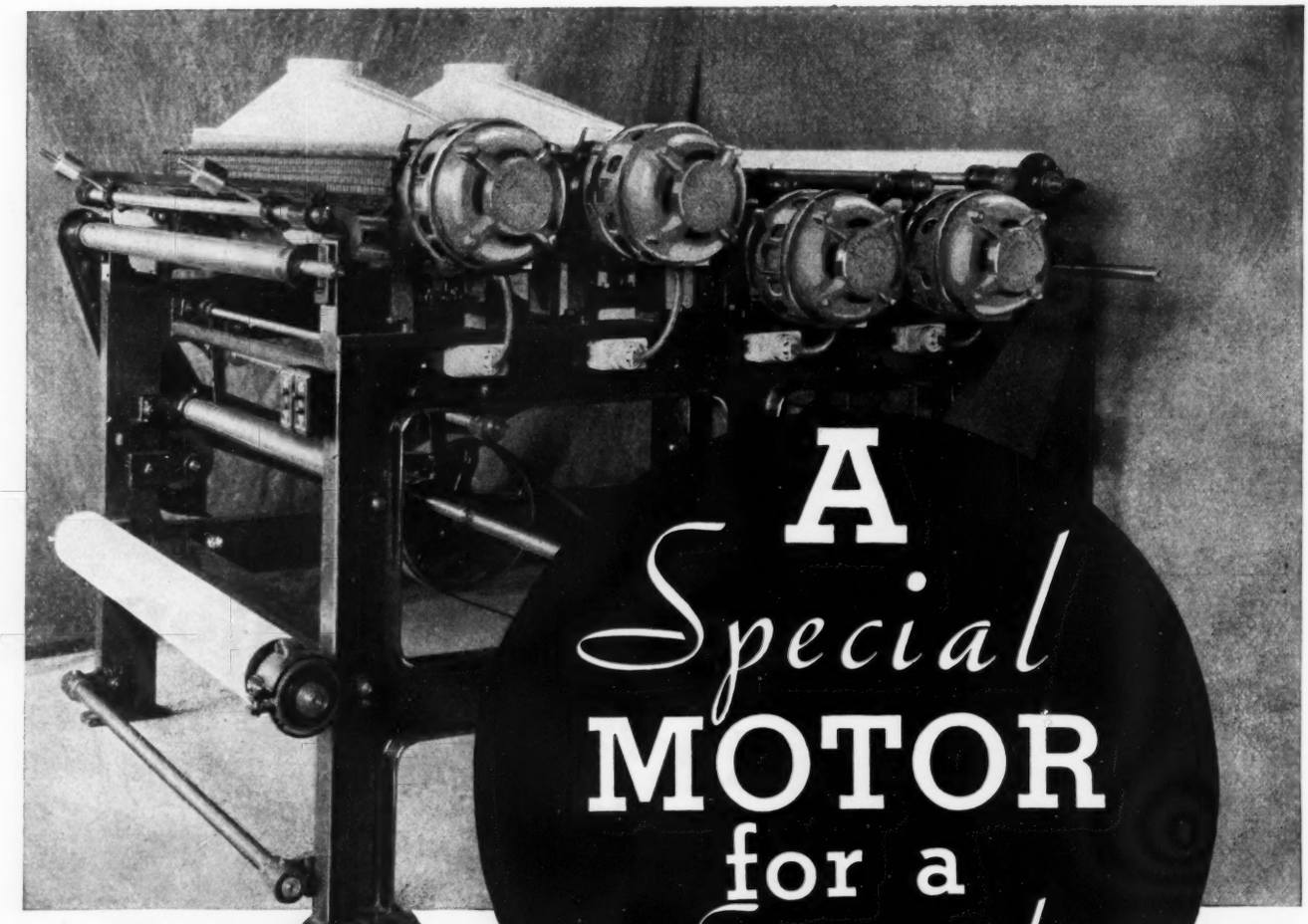
This cyclonic action keeps lint from accumulating yet does no harm, for only a gentle current passes over the roving.

Eliminate hand cleaning and thereby reduce gouts. Let your spinners handle more sides and produce more and better yarn, with further savings in subsequent processes.

Our engineers will gladly explain why the American Mono-Rail Overhead Cleaner can cover more frames with shorter cleaning intervals. Write for further facts to the American MonoRail Company, 13106 Athens Ave., Cleveland, Ohio or to Curran S. Easley, Box 755, Greenville, S. C.

AMERICAN MONORAIL *Automatic* **OVERHEAD CLEANERS**

for Spinning, Winding, Spooling and Warping



A *Special* MOTOR for a *Special* JOB

A recent testimonial to the value of Diehl motors is their application to the new Curtis & Marble Shearing Machine. The mounting of four Diehl Shaftless Motors on the journals of the shear revolvers solves a difficult problem and results in a neater, simpler shearing machine with a straighter cloth line. The motors are an essential factor in this radical improvement.

Textile machinery produced by many of the best known manufacturers of textile machinery in the field guard your welfare and theirs with Diehl Textile Motors, whose reputation for reliable, trouble-free, long-lived, easily-maintained service is known throughout the industry.

Depend on Diehl motors. They are successfully driving winders, coners, warpers, pickers, coppers, cards, dryers and other machinery—for cotton, rayon, silk and woolens—combining utmost compactness, high efficiency and reliable performance with a minimum of maintenance.

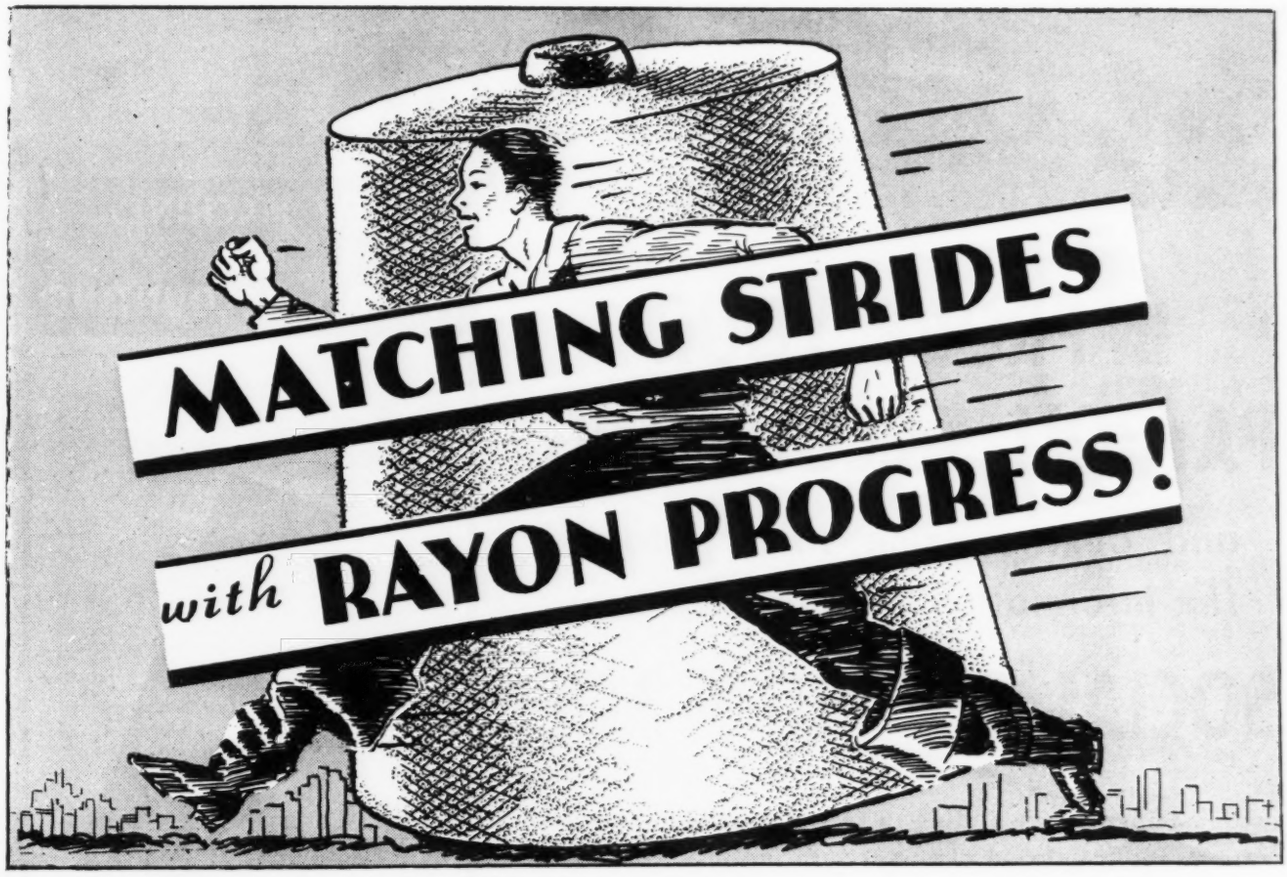
FOR FURTHER INFORMATION SEE OUR CATALOG IN SWEET'S

Write for this book

Let us send you a copy of this book which contains illustrations of a number of interesting textile motor applications. It is yours for the asking.

DIEHL MANUFACTURING CO., Elizabethport, N. J.
Electrical Division of THE SINGER MANUFACTURING CO.
ATLANTA BOSTON CHICAGO DALLAS NEW YORK PHILADELPHIA
Textile Dept., P. N. Thorpe & Co.—267 Fifth Ave., New York

DIEHL *Textile* MOTORS



Onyx Research contributes many advances to RAYON PROCESSING and FINISHING!

As the American Rayon industry celebrates its 25th birthday, the Onyx laboratories also complete a quarter-century of research, pioneering and experimenting in the field of Rayon processing and finishing.

A Few Typical Rayon Products:

*ALIPHATIC ESTER SULPHATE and GLYCERYL SULPHATES	*For boiling-off, dyeing, finishing.*
CEL-RAY SCOURER	*(Acetate Rayons)*
*DYE PENETRATOR-R	*(Clear, level shades)*
*DULLATONE	*(Delustering)*
*VELVOSHEEN	*(Softener-finish)*
*PHOSPHAMIZED FINISHING OILS	*(non-oxidizing)*

**Reg. U. S. Pat. Off.*

Working as "specialists on finishing materials", the Onyx chemists developed many outstanding products which raise the standards of sizing, scouring, dyeing, printing and finishing. The Onyx line has highly effective products for all Rayon processing needs.

Manufacturers are invited to write for samples, or to consult with our laboratories whenever any problems arise.

● **WRITE** *for your copy of our new catalog, just off the press.*

Onyx Oil & Chemical Co., Jersey City, N. J.

Specialists on Finishing Materials

Southern Repr. E. W. Klumph, Charlotte, N. C.
Midw. Repr. Maher Color & Chemical Co., Inc., Chicago.
In Canada: Onyx Color & Chemical Co., Ltd., Montreal.

Onyx
LABORATORY-CONTROLLED PROCESSING & FINISHING COMPOUNDS

Burroughs

IMPROVE YOUR PAYROLL ACCOUNTING

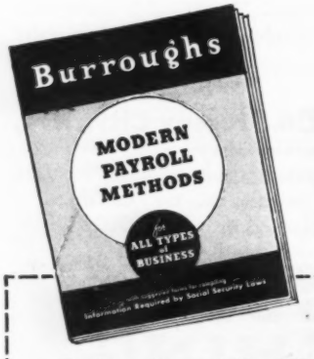
and at the same time obtain the information required by the

SOCIAL SECURITY ACT

Textile companies are finding in recent Burroughs developments a simple solution of the accounting problems set up by the Federal Social Security Act. Often the exceptional speed, ease and economy of new Burroughs machines make it possible for employers actually to lower accounting costs and still have the additonal information required.

In fact, many say: "We are glad the Social Security Act prompted us to investigate, because we now have the complete payroll accounting system we have needed for a long time."

We suggest that you call the local Burroughs office. A Burroughs representative will be glad to show you how we can assist you to meet your problem with the minimum change in equipment, and at the lowest possible accounting cost.



THIS NEW FOLDER MAY HELP YOU

Burroughs has just prepared an interesting descriptive folder illustrating complete payroll accounting methods, with typical forms for maintaining the information required by the Social Security Act. The forms show representative entries and suitable column headings. You may have this folder without charge simply by filling in and mailing the coupon.

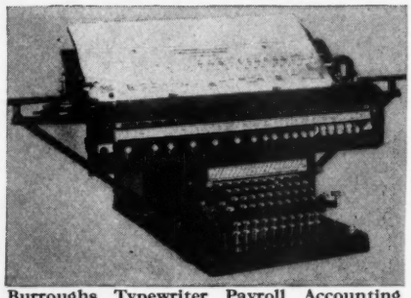
Burroughs Adding Machine Company
6740 Second Boulevard, Detroit, Michigan

Send me the new folder, "Modern Payroll Methods"—which includes illustrations of forms for compiling figures required by the Federal Social Security Act.

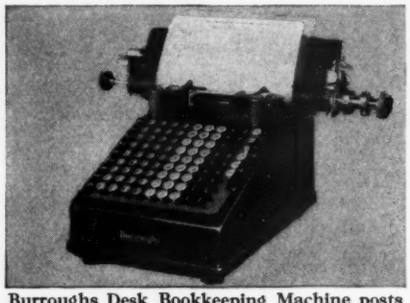
Name_____

Address_____

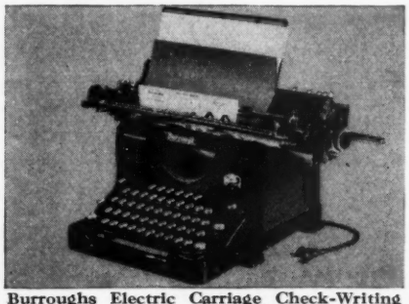
NEW MACHINES FOR PAYROLL ACCOUNTING



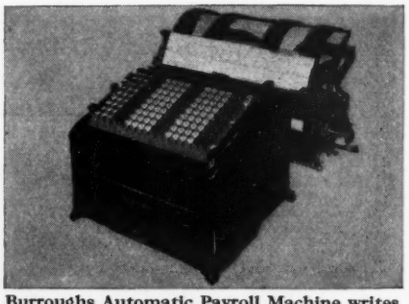
Burroughs Typewriter Payroll Accounting Machine writes check, earnings record, employee's statement and payroll summary in one operation. Column selection automatically controlled. All totals accumulated.



Burroughs Desk Bookkeeping Machine posts earnings records, automatically prints dates in proper columns, automatically subtracts deductions—calculates net pay.

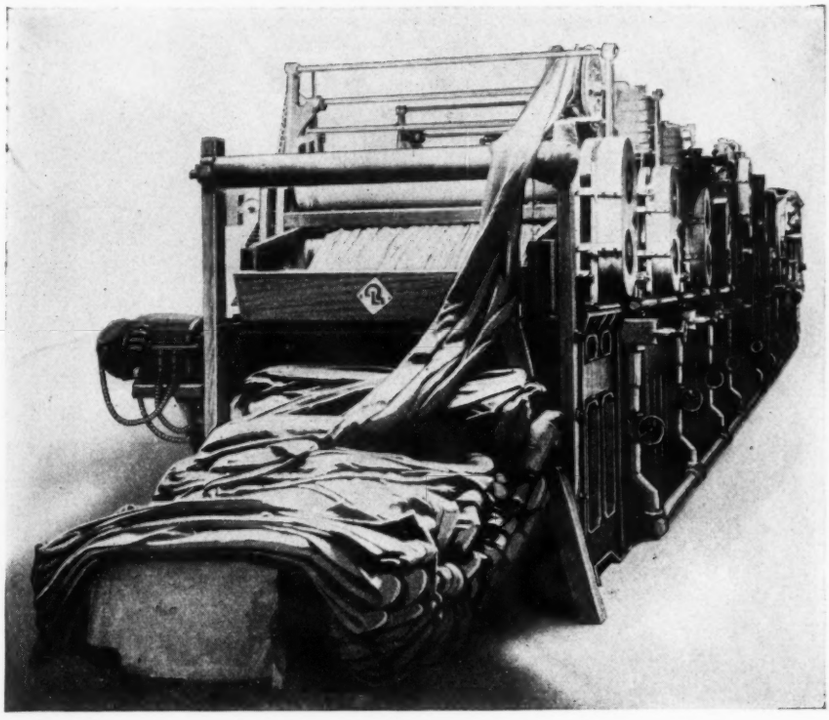


Burroughs Electric Carriage Check-Writing Typewriter writes payroll checks either in units or in strips. Payroll summary completed at same operation. Fast and easy insertion and removal of checks.



Burroughs Automatic Payroll Machine writes check, employee's earnings statement, earnings record and payroll summary in one operation. Accumulates all necessary totals, automatically ejects and stacks checks in order.

HYATTS CONTINUOUSLY CUT COSTS IN CONTINUOUS CLOTH WASHER



Continuous operation of any machine depends largely upon whether it is equipped with bearings that will stand the gaff. Hyatt Roller Bearings have demonstrated for many years that they can "take it" when applied to any textile machine.

Rolls turn easily regardless of the pressure applied.

Roll coverings last longer.

Oil or grease does not leak out.

Power is saved.

Specify these better bearings in all your Textile Machinery.

30 HYATTS in

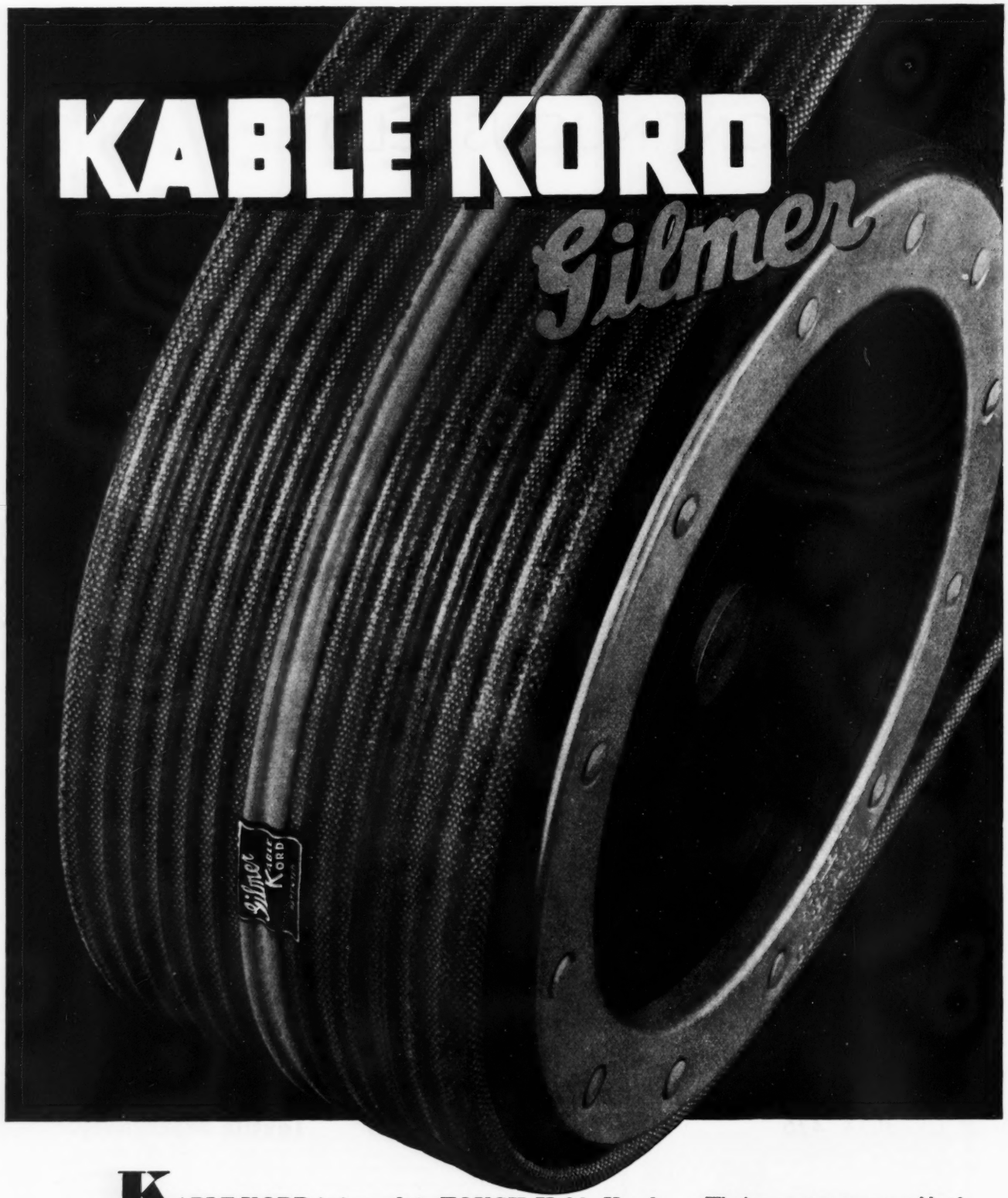
RIGGS AND LOMBARD

Continuous Cloth Washer

This washer built by Riggs & Lombard, Inc., Lowell, Mass., has used Hyatt Roller Bearings continuously since it was placed on the market.

HYATT ROLLER BEARING COMPANY
P. O. BOX 476 NEWARK, NEW JERSEY

HYATT
ROLLER BEARINGS
PRODUCT OF GENERAL MOTORS

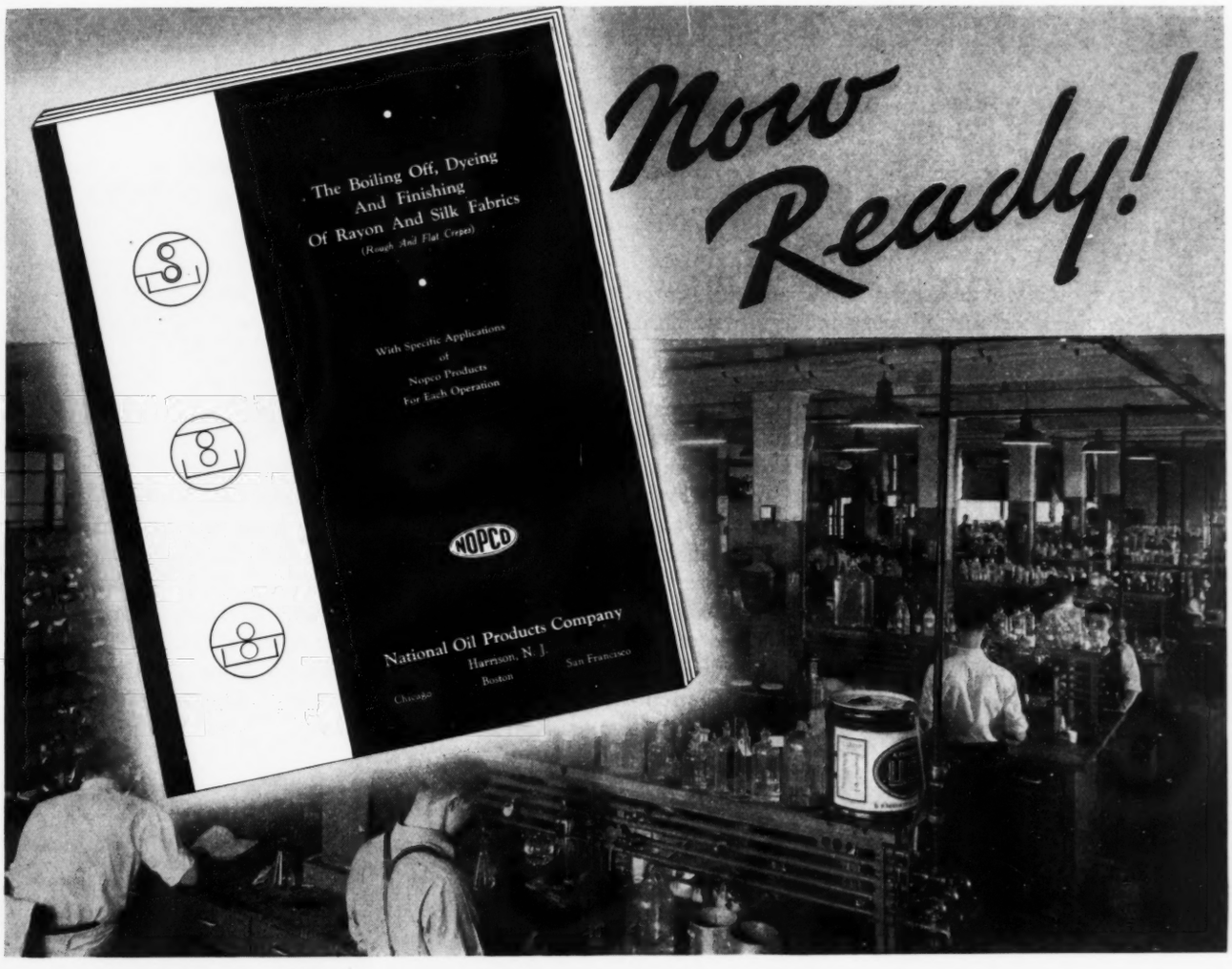


KABLE KORD is just plain TOUGH. Kable Kord stands the gaff. It's built *tough*, to stay *tough*, on the *toughest* flat-belt jobs. Unique "two-belts-in-one" construction gives tighter, no-slip pulley grip—means far longer, more efficient working life—and *delivers more actual pull per square-inch than any other flat belt ever made.* Kable Kord really cuts costs.

L. H. GILMER COMPANY · Tacony, Philadelphia

What's *your* present power problem? Lick it with Kable Kord—endless or in rolls. Give it a tough try-out. You'll find its got the stuff. The Kable Kord Data Book is FREE. What's your address? No obligation.

Gilmer BELTS



A NEW NOPCO HANDBOOK FOR SILK AND RAYON

ALTHOUGH this new handbook discusses primarily the various Nopco products made for the silk and rayon industries, it contains many helpful and instructive suggestions for the general improvement in the finishing of silk and rayon fabrics.

Embossing, de-sizing, scouring, boiling-off, dyeing and finishing are among the processes briefly considered — together with methods which have been found practical in remedying some principal fabric defects.

One section of the handbook deals with the treatment of rayon taffetas, Bemberg and weighted silks.

Because of the semi-technical manner in which it is written, "The Boiling-Off, Dyeing and Finishing of Rayon and Silk Fabrics" is equally helpful to the layman as well as mill foremen and throwsters.

National Oil Products Co., Harrison, N. J.
Gentlemen: Please send me free copy of your new handbook "The Boiling-Off, Dyeing and Finishing of Rayon and Silk Fabrics."

Name .....
Company ..... Address ..... C 9

Members Throwsters Research Institute
Member of U. S. Institute of Textile Research, Inc.

NOPCO

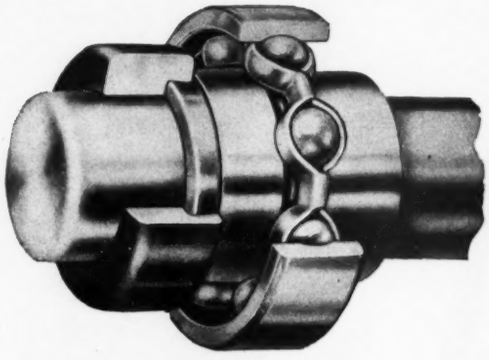
National Oil Products Company, Inc.

HARRISON, NEW JERSEY BOSTON - CHICAGO - SAN FRANCISCO

MORE THAN A DOLLARS AND CENTS SAVINGS

WITH FAFNIRS

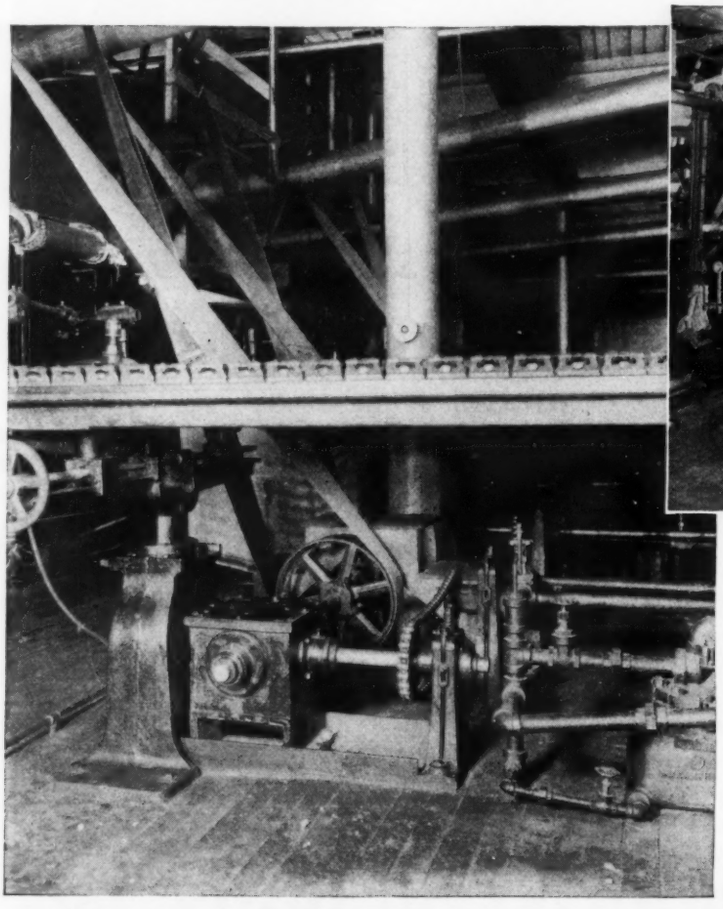
ON THIS TENTER FRAME

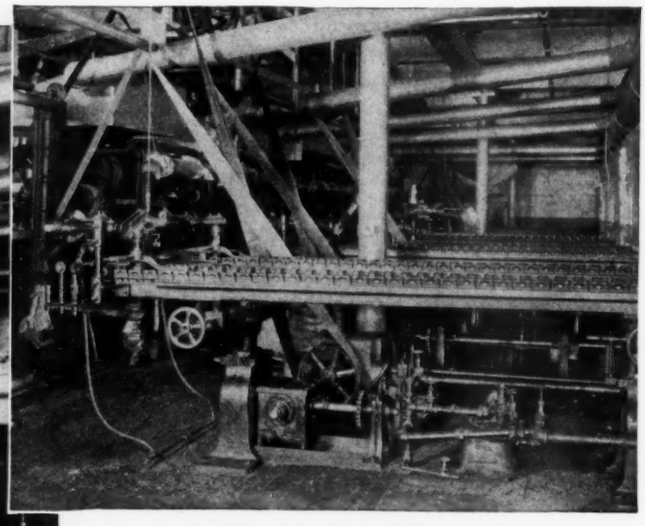


Formerly it was necessary to overhaul the Tenter Frame at a certain mill every two or three months at a cost of $30 each time. The shafts did not keep in line, gears tore up and the lubricant from the exposed gears threw oil on the cloth. Since installing Fafnir Bearings on the first unit over four years ago, this mill has had no breakdowns whatsoever and no loss of material from spoilage by oil or grease. Now the other Tenter Frames are similarly equipped, and the savings continue to mount.

On each Tenter Frame drive the gear box utilizes three Fafnir Flange Units and the drive shaft two Ball Bearing Hanger Boxes. Inside of the dryer are several floating type pillow blocks of Fafnir design—oil lubricated because of the temperature, but also oil-tight.

These many and varied applications of units from "the most complete line of ball bearings in America" are effecting important economies at this mill. Fafnir can do the same for *you*. Write for complete information. . . . THE FAFNIR BEARING COMPANY, *New Britain, Conn. Representatives also at:* Atlanta, Ga. . . . Birmingham, Alabama . . . Boston, Mass. . . . Charlotte, N. C. . . . Dallas, Texas . . . Houston, Texas . . . Kansas City, Missouri.





FAFNIR BALL BEARINGS ARE NOW IN SERVICE IN SUCH TEXTILE MACHINERY AS THE FOLLOWING:

Bale Breakers	Winders	Tenter Frames
Feeders	Warpers	Calenders
Openers	Slashers	Button Breakers
Feed Tables	Looms	Shoddy Pickers
Distributors	Bleaching Equipment	Garnett Machines
Breaker Lappers	Dyeing Equipment	Burr Pickers
Intermediate Lappers	Extractors	Mixing Pickers
Finisher Lappers	Dryers	Scourers
Cards	Printing Machinery	Fulling Mills
Roving Frames	Agers	Shearing Machines
Spinning Frames	Soapers	Rayon Pot Spinners
Twisters		

FAFNIR BALL BEARINGS

PROTOZYME-T

Has greater liquefying powers

• Protozyme-T is a new combination of proteolytic enzymes having exceptional liquefying powers—thus it is more economical to use.

Protozyme-T is especially adapted for the removal of protein sizes, glues, gelatines and fats. It gives a rapid strip with a minimum of handling on jig or boil-off machine. In many instances it is possible to completely eliminate the boil-off operation.

Protozyme-T leaves rayons and acetates with a soft, full hand.

FREE . . . ***Write today for samples and quotations.***

JACQUES WOLF & CO.

MANUFACTURING CHEMISTS AND IMPORTERS . . . PASSAIC, NEW JERSEY

Warehouses: **Providence, R. I.; Philadelphia, Pa.; Utica, N.Y.; Chicago, Ill.; Greenville, S. C.; Chattanooga, Tenn.**

A Valve FOR "WEAR AND TEAR" SERVICE

20

CRANE

250-Pound
Brass Globe and Angle Valves
Plug Type Disc

WORKING PRESSURES
250 pounds steam; 500° F.
500 pounds cold water, oil, or gas, non-shock

TEST PRESSURE
650 pounds hydrostatic

FEATURES
Exelloy Renewable Seat
Nickel Alloy Plug Type Disc
Union or Bolted Bonnet

SERVICE RECOMMENDATIONS
These valves are recommended for exceptionally severe service, such as for throttling, and for soot blower, blow-off, boiler feed, drip, and drain lines.

Cross Section No. 212 P. Globe

2½ and larger valves have bolted bonnet

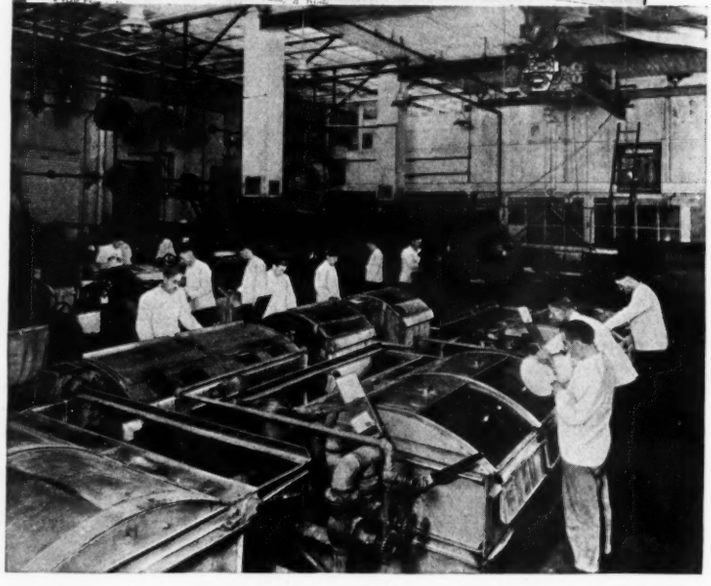
No. 212 P. Globe Screwed

No. 214 P. Angle Screwed

Size No. 212 P or No. 214 P	Inches	¼	⅜	½	¾	1	1¼	1½	2	2½	3
List Prices	Each	2.70	3.10	4.15	5.35	7.25	10.00	14.00	20.00	38.00	60.00

For wrenches for removing seat rings, see page 169

Body: The body is Crane Special Brass, a high grade steam metal



Crane equipment for every type of mill or power plant service is fully described in the new No. 52 Catalog. For service recommendations, description, list prices and dimensions on Crane No. 212 P Globe and No. 214 P Angle Valves, see page 20.

● For throttling, blow-down and other severe services in the textile mill and its power plant, it would be difficult to find an equal to the Crane No. 212 P Brass Globe Valve and its companion angle valve, No. 214 P.

The plug-type disc has been especially designed for easy regulation of flow when throttling and the wide seating surfaces offer excellent resistance to foreign matter, wire-drawing, wear, temperature and scoring. The metals used are harder, tougher and stronger than ordinarily used in brass valves.

The bonnet-joint construction provides a strong, tight joint which can be easily and quickly dismantled and reassembled without injury to the valve. The stem threads are accurately machined and the threaded length is unusually long, assuring long life.

The Crane line of valves and fittings for textile mills is complete. Each is built to those high standards of metal control, design, workmanship and precision which are always found in Crane valves and fittings. For general overall economy, standardize on Crane. The Crane branch or distributor in your vicinity can fill your needs.

Let Profits Pay for Plant Improvements. Use the Crane Finance Plan.

CRANE

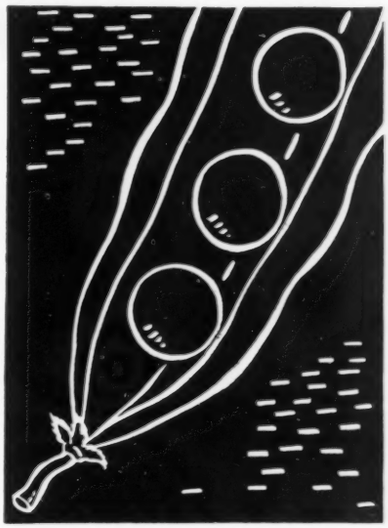
CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS · NEW YORK: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

AS *Unlike*

AS PEAS IN A POD



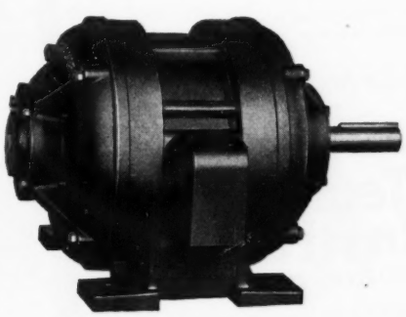
● Peas in a pod may look exactly alike . . . in color, in size, in shape . . . but naturalists know that these seemingly identical peas have huge inherent differences—one may engender a sturdy race, another a race of weaklings.

PEAS . . . and MOTORS! In both, the possibilities for inherent differences are great.

Motors can be built of light materials so that they will hold together and fulfill their electrical characteristics . . . but what about their mechanical durability?

Allis-Chalmers Motors excel because they were distinctly designed and developed for severe industrial duty. They were not developed through our electrical department alone, but through our electrical department working closely in conjunction with all the highly specialized knowledge and experience of all the various departments of the Allis-Chalmers Mfg. Co., builders of the most diversified line of machinery on the American continent.

The Allis-Chalmers Mfg. Co. builds standard motors of every type from 1 hp. up—also motors for special application



Allis-Chalmers Motors have been designed and built not only to deliver their electrical characteristics precisely, but to take a beating day after day and year after year and continue to deliver them faithfully. They are the sturdiest motors on the market—bar none.

Their great mechanical strength reduces maintenance costs to the minimum and extends their life beyond that of all less sturdily constructed motors, making them the most profitable motor buy on the market today.

MOTOR DIVISION

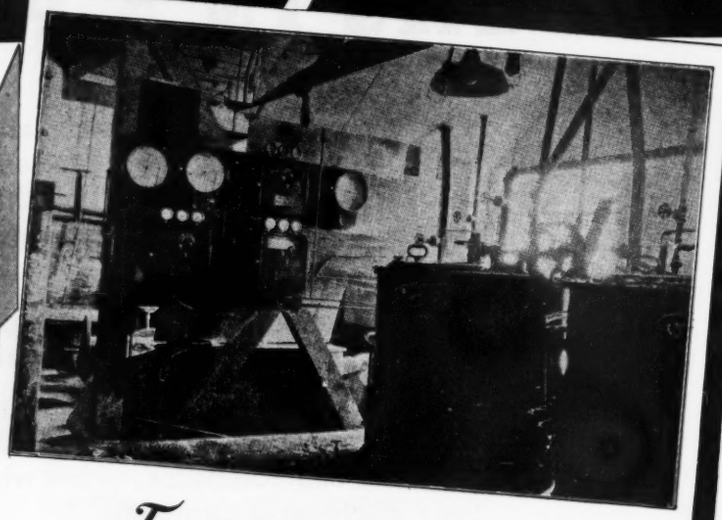
ALLIS·CHALMERS

FOR EVERY PURPOSE

MILWAUKEE WISCONSIN

AS TRUE 10 YEARS AGO *as today...*

THIS PAGE TELLS A STORY OF PIONEERING IN TEXTILE MILL TEMPERATURE CONTROL—OF TAYLOR SLASHER CONTROL OPERATING SUCCESSFULLY AND EFFICIENTLY A DECADE AGO



Tycos Automatic Control on Size Cooking Kettles

A prominent New England Cotton Mill (name on request) decided a short time ago to install *Tycos* Automatic Temperature Control throughout their slasher system.

Their mechanical men and our engineers observed with interest the first run of their size cooking kettles, using these instruments.

They reported a *six inch greater swell in the kettle* than was possible with the old hand control. The size itself was much smoother, with the distinctive color which denotes proper cooking.

This Mill has been able to pay for the entire *Tycos* control equipment in a very short time with the economy it effects on their size kettles alone.

The results obtained in this Mill can be duplicated in your Mill.

Write to our Engineers for additional information. Catalogs on request.

Send for Textile Catalog Part 3 and Information on Tycos Slasher Control System

Taylor Instrument Companies

ROCHESTER, N. Y., U. S. A.
Canadian Plant, Tycos Building, Toronto
Manufacturing Distributors in Great Britain
Short & Mason, Ltd., London

TYCOS Temperature Instruments

INDICATING - RECORDING - CONTROLLING

IN 1926 the advertisement reproduced here on "Tycos Slasher Control" appeared in textile magazines. At that time the pioneering work done by Taylor Engineers had already resulted in establishing the efficiency of this system of control in improving product quality and uniformity and in reducing finishing costs.

Today, modernized to meet the latest demands of mill production and engineered to fit into the individual needs of every mill, the Taylor System of Slasher Control is to an even greater degree one of the most important contributions in temperature control ever made to the industry.

This is not said in a boastful spirit. It is, rather, to call attention to the records of all those mills that have installed Taylor Slasher Control and profited from its efficiency and economy. Taylor Engineers offer to your mill the experience of these ten years in designing, building and installing the most effective control possible for your Slashing Process.

For any and all information regarding Taylor Slasher Control and its ability to save you money, ask a Taylor Representative, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

An advertisement on Slasher Control as inserted in textile magazines in 1926. The name "Taylor" instead of "Tycos" today identifies Taylor Systems and Instruments for the Textile Industry. But the story of automatic temperature control and its benefits applies today as it did ten years and more ago.

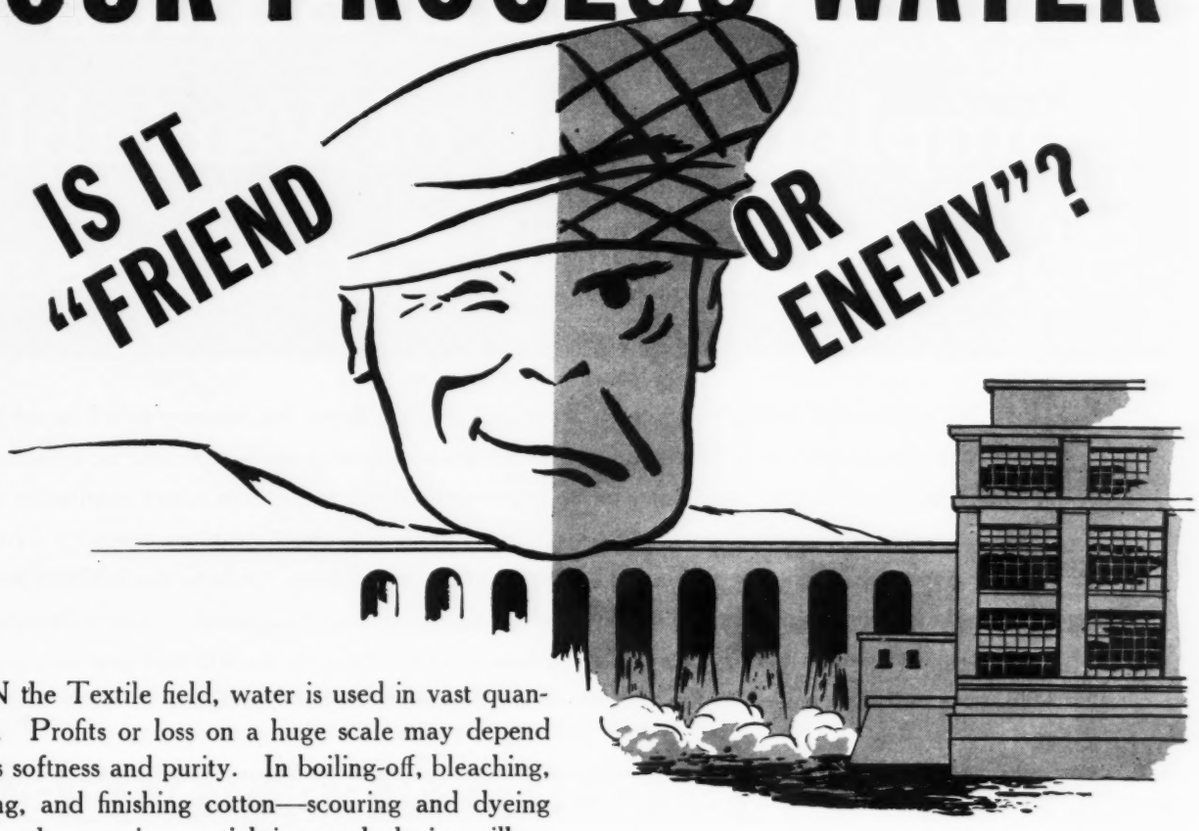
Taylor

Indicating | Recording • Controlling

TEMPERATURE, PRESSURE *and* FLOW INSTRUMENTS

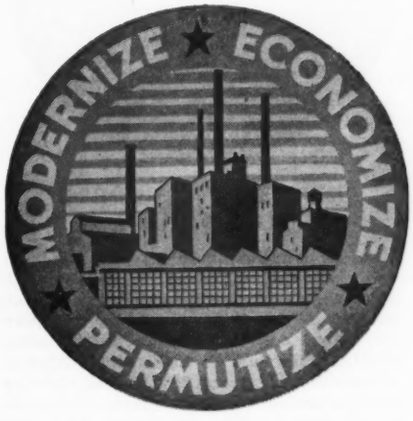
YOUR PROCESS WATER

IS IT "FRIEND OR ENEMY"?



IN the Textile field, water is used in vast quantities. Profits or loss on a huge scale may depend on its softness and purity. In boiling-off, bleaching, dyeing, and finishing cotton—scouring and dyeing wool—de-gumming, weighting and dyeing silk—processing and dyeing rayon—hard, turbid or iron-bearing water is an enemy to quality production and low costs. As the largest and oldest organization in the field of water conditioning, The Permutit Company has helped prominent textile mills in all branches of the industry to meet exacting technical and economic requirements in solving a wide variety of water supply difficulties.

May we help with your problem? Use the coupon below.



PERMUTIT WATER CONDITIONING EQUIPMENT may now be purchased under the terms of the National Housing Act. These loans are not made by the Government, but by your own banker . . . or they can be arranged through Permutit. The terms of payment allow gradual liquidation over a period of years, so your payments are more than met by the savings effected by Permutit.

Permutit

Water Conditioning

THE PERMUTIT COMPANY, Dept. B1, 330 West 42nd Street, New York, N. Y.

Please send us information about your service to the textile industry.

(If you have a special process or department in connection with which you have a water softening or purification problem, please define it on the above line.)

Name ----------

Title ----------

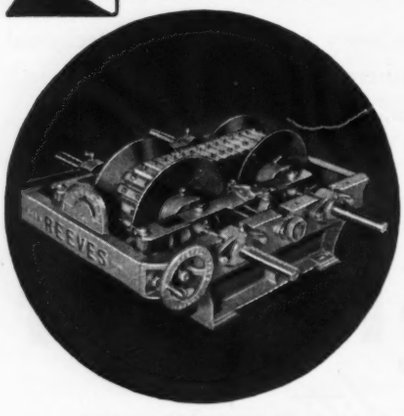
Company ----------

Address ----------

Why REEVES Builds a Complete Line of Variable Speed Control Equipment

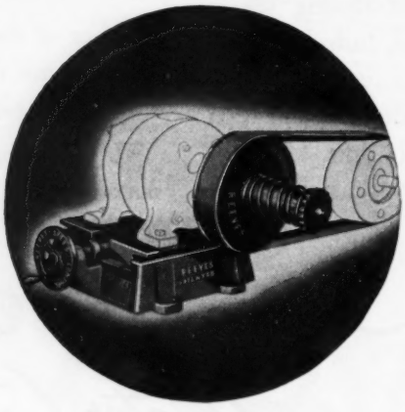
That Number 2 iron you use to lay a golf ball far down the fairway won't do for a short approach shot. Nor is one standard lure—or even a few—sufficient for a fishing trip. It's the same in industry in the important subject of variable speed regulation of machines. For successful results—to meet each individual problem correctly—you need a full line of speed control equipment to choose from. Only in the REEVES line do you find a complete selection of available time-tested equipment . . . many designs, sizes, controls and a wide range of speed ratios. Only in the REEVES line can you select the one unit best suited to the individual requirements of the machines in your plant.

THE 3 BASIC REEVES UNITS



REEVES VARIABLE SPEED TRANSMISSION

Provides absolute precision in speed adjustability over wide range—2:1 to 16:1 ratios of speed variation. Power capacities fractional to 100 h. p. Modern, compact, adaptable open and enclosed horizontal and vertical designs; also operating parts (without frame) for incorporating into machine. Manual, electric remote and completely automatic controls. Standardly supplied on over 1100 different makes of machines.



REEVES VARI-SPEED MOTOR PULLEY

A simple, compact speed-changing unit for light h. p. machines requiring not more than 3:1 ratio of speed variation. Forms actual driving element between motor and driven machine. Mounts on standard shaft of any constant speed motor. Frequently possible to enclose motor and unit inside frame of machine. Flat-face or sheave pulley may be used on driven shaft. Efficient, space-saving, low cost. Seven sizes: fractional to 7½ h. p.

REEVES VARI-SPEED MOTODRIVE

Ideal for machines where space is limited and where direct connection is required. Combines motor, speed-varying mechanism, and, where required, reduction gears. Any foot type, constant speed, ball bearing (NEMA) motor may be used. Many different assemblies of motor, handwheel, driving shaft extension, reduction gears. Horizontal and vertical designs ¼ to 10 h. p.; 2:1 to and including 6:1 ratios of speed range.

REEVES PULLEY COMPANY
COLUMBUS, INDIANA

Send, without obligation, information on Speed Control units checked herewith—and their applications to following machines:

.....

☐ Reeves Variable Speed Transmissions ☐ Vari-Speed Motor Pulleys ☐ Vari-Speed Motodrives

Name .....

Company .....

Address .....

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Sail on!

. . . TO A FINER FINISH!

*Parapon . . . the FINISH FOR ACETATE, VISCOSE, COTTON AND SILK!

● In a single operation all these fabrics acquire a permanent softness and lustrous appearance . . . a luxurious effect which a smart manufacturer knows to be of great value in the marketing of his merchandise.

● PARAPON does its work quickly and well . . . it is powerful in penetration . . . ideal in wetting out properties . . . eliminates the danger of atmospheric oxidation, rancidity, or breaking down during the drying operation.

● These multiple benefits • plus the fact that you save time and money for your plant • make PARAPON the Modern Finish. ● Put PARAPON to work. A trial order and detailed information await your request.

"The Finest Fabric is Finer for its Use" *Reg. U.S. Pat. Off.

ARKANSAS CO. • INC.
233 BROADWAY • NEW YORK

PARAPON

TRY U. S. ROYAL JR. ON YOUR SPINNING FRAMES

BOOK OF FACTS
Do you know: that during the last few years many textile concerns have been completely equipping their mills with rubber* belts exclusively...that rubber belts are replacing the older types of belting...that rubber belts are thoroughly liked by the operators...and that through rubber belts management has reduced belting costs and maintenance and has increased efficiency?
To secure equal accomplishments start now to equip your spinning frames with U. S. Royal Jr. Transmission Belts.
*More than half the weight of a rubber belt is cotton duck.

Specify U. S. Royal Jr., the Textile Rubber Belt designed for Textile Industry Services.

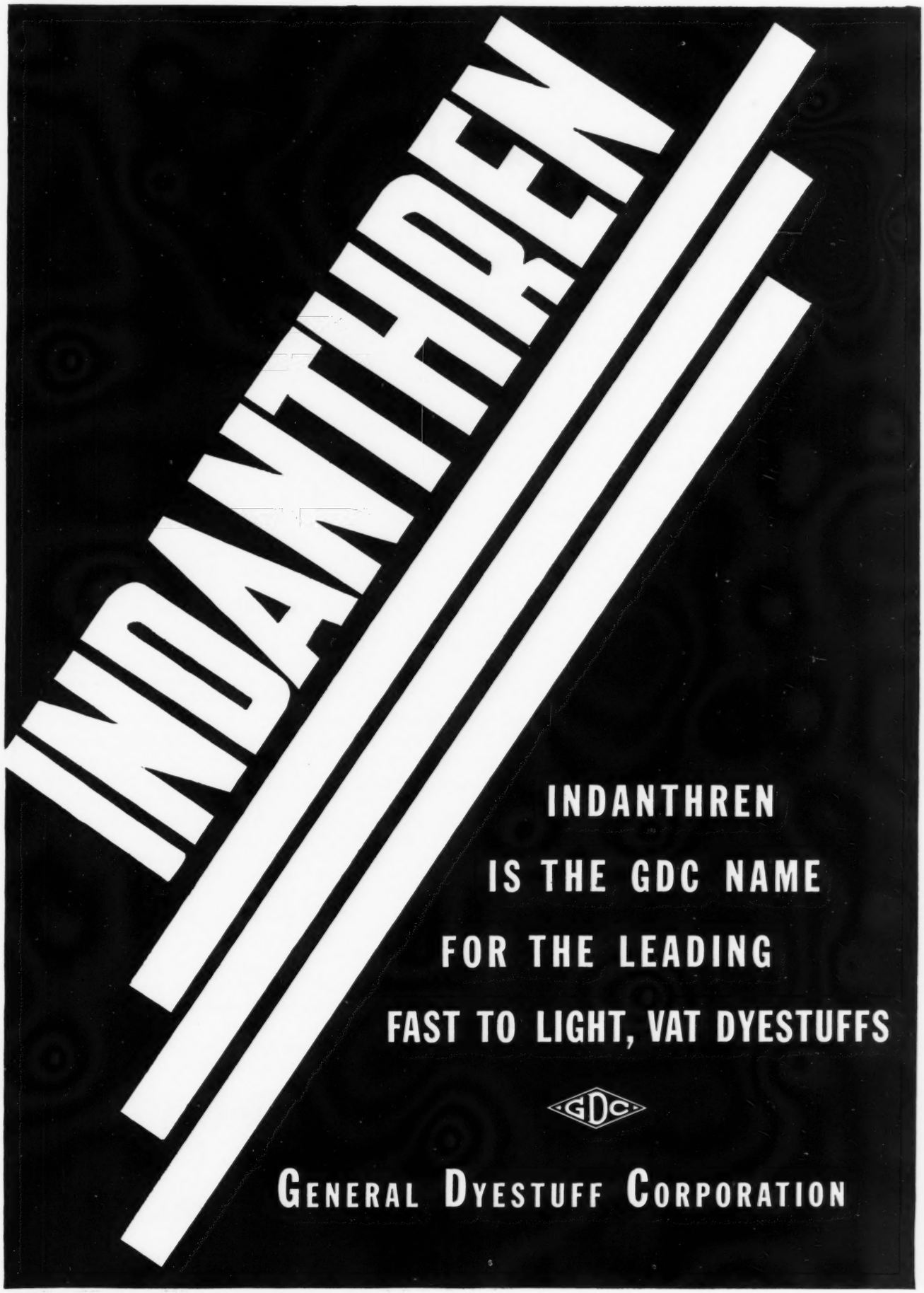
Made of closely woven, strong cotton duck, thoroughly impregnated with long-life rubber, this new textile rubber belt is capable of taking high-speed punishment... flexible enough to give easily to light strains.

For increased efficiency, greater satisfaction, and lower costs in your mill, specify that U. S. Royal Jr. be used.

These U. S. Rubber Branches serving the great textile centers are at your service: Atlanta — Birmingham — Boston — Philadelphia — Baltimore.

United States Rubber Company

United States Rubber Products, Inc., New York, N. Y.


INDANTHREN
INDANTHREN
IS THE GDC NAME
FOR THE LEADING
FAST TO LIGHT, VAT DYESTUFFS
GDC
GENERAL DYESTUFF CORPORATION

85,000 CREDIT FILES

FOR TEXTILE MILLS

Our records contain complete credit information on more than 85,000 customers of textile mills.

Think what this means in intelligence of judgment and rapidity of decision on credit requirements.

Think what it means in creating more sales for you.

The information we possess frequently permits larger shipments than you could possibly make without it--and more shipments mean more profit for you.

We have information right now on most of the customers to whom you sell--*or wish to sell.*

A factoring contract with us, means cash business for you, instant action, more sales, more profit and complete relief from credit losses.

TEXTILE BANKING COMPANY

CAPITAL AND SURPLUS $5,000,000

55 MADISON AVENUE, NEW YORK

I'M LITTLE
BUT I CAN SAVE YOU
PLENTY OF DOLLARS
"I am an Alemite Fitting! I'm saving thousands of dollars for the textile industry every year, because I lick friction wherever wheels turn. I prevent bearing failures, breakdowns, and expensive contamination of fabrics and equipment. I am the cleanest, most economical and most dependable lubricating device known!"

ALEMITE Lubrication on your textile machinery is not an expense, but an investment which pays big dividends year in and year out. That's why it's furnished as factory equipment by leading textile machinery manufacturers. Alemite Systems prevent bearing failures and breakdowns. Exactly the right amount of lubricant is applied directly to each bearing and forced to every part of the bearing surface.

There can be no contamination of fabrics or machinery, because the old-fashioned, dripping, lint-filled oil hole has become a thing of the past. The machine which is lubricated by an Alemite System doesn't need lubricating so often, and each application takes less time.

Alemite Fittings are sealed to keep lubricant in, and to keep dust, dirt, and lint out. They open only to admit lubricant under pressure. They avoid lubricant waste by using it in metered quantity, for the Alemite Gun delivers a measured amount per stroke.

Get your share of the thousands of dollars Alemite is saving for textile mills every year. There is an Alemite System, power or manually operated, to save you money on every machine you use. Alemite Equipment can be installed in a short time, at small cost, without halting production.

Read the money-saving facts in our new manual, "The Case of Alemite vs. Friction." It's *free*. Mail the coupon!

ALEMITE
A Div. of Stewart-Warner Corporation
1884 Diversey Parkway, Chicago, Ill.

Stewart-Warner-Alemite Corp'n. of Canada, Ltd.
Belleville, Ontario, Canada

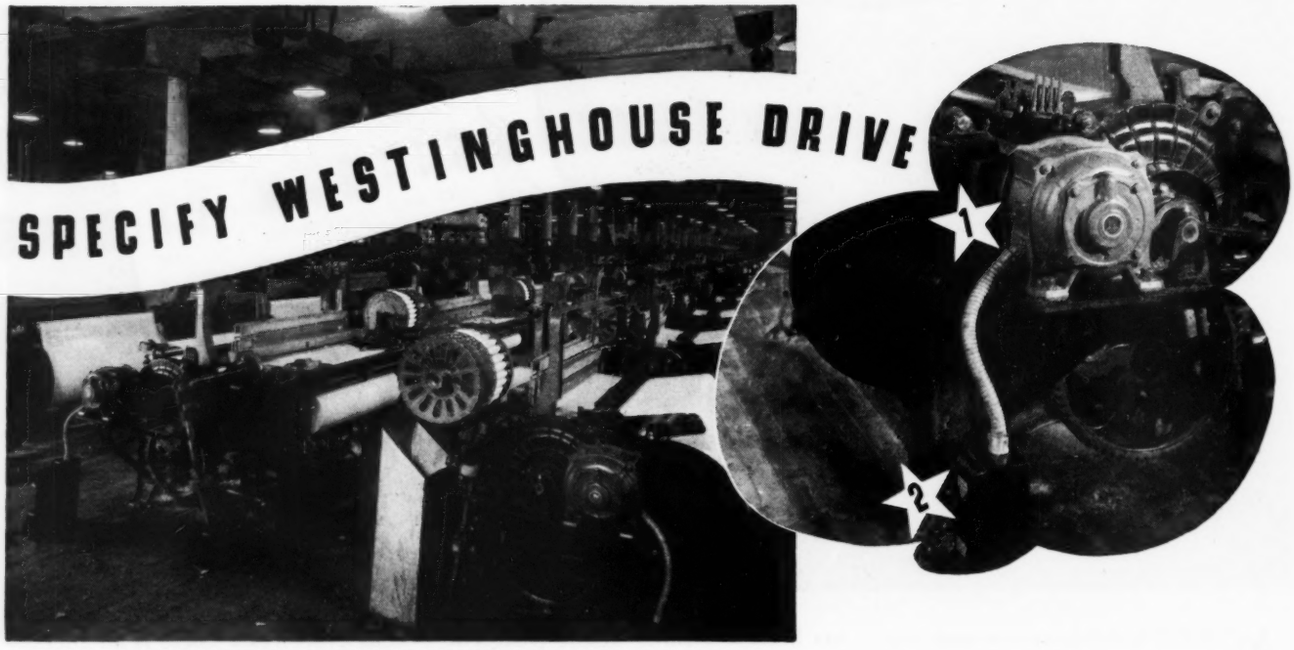
Enjoy Horace Heidt and his Alemite Brigadiers every Monday at 7 P. M., E. S. T., Columbia Coast-to-Coast Network

ALEMITE
REG. U. S. PAT. OFF.
CONTROLLED LUBRICATION

ALEMITE—*A Div. of Stewart-Warner Corp'n.*
1884 Diversey Parkway, Chicago, Ill. Dept. I
Please send your new manual, "The Case of Alemite vs. Friction."

Name.....
Address..... *State*.....
City.....
Firm.....

Insure Profits from your NEW HIGH-SPEED LOOMS



40-inch Draper looms driven by Westinghouse ¾-hp. motors and WK Starters.

MATCHED drive for new high speed looms is one way of insuring profits from your machinery investment because these drives keep looms running smoothly at maximum output.

Westinghouse motors and control supply every electrical and mechanical requirement of drive for the latest types of looms such as the Draper model X. And users are getting maximum economy from these models powered with Westinghouse drive.

Ample reserve capacity takes care of all load conditions and gives smooth trouble-free operation during the breaking-in period.

High efficiency and high power factor of the motor assures lower cost per pound of cloth.

Low maintenance is assured because the oil filler cap is easily accessible, the oil column is vertical and has extra capacity for quick filling. Over-oiling is impossible and oil cannot enter windings.

As proof against loosening from vibration the conduit fitting is screwed into the frame. Also the pinion is locked to a tapered fit on the shaft by a nut and cotter pin.

When you buy new looms, get the extra assurance of true low cost operation that comes with using Westinghouse motors and control. They're designed especially for Draper models X, C, XK, XL and Crompton & Knowles models C3, C4, S3, S4, W2 and W3. Westinghouse Electric & Manufacturing Co., East Springfield, Mass. J 90036

★1

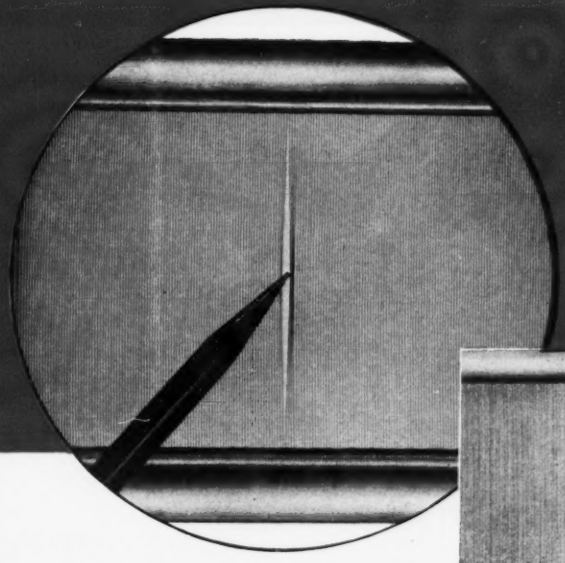
High efficiency and extra strength are built into Westinghouse loom motors to withstand high-speed loom service. They are totally enclosed and windings are triple impregnated to make them damage-proof against high humidity.

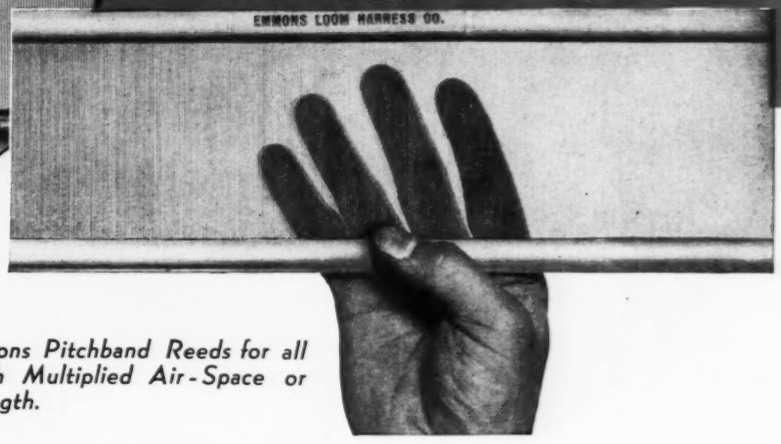
★2

WK-18 Motor Starter protects the motor against overloads. It is safe and positive in operation under conditions of high humidity.

Westinghouse LOOM DRIVE

These are the CHEAPEST * REEDS to USE





Emmons Metal Reeds for Weaving Rayon and Silk with detachable brass or wood backs. Single or double Spring.

Emmons Pitchband Reeds for all Weaves – with Multiplied Air-Space or Built-In Strength.

* EMMONS Metal and Pitchband Reeds CUT Reed Costs Amazingly on "Cost-to-Use Basis."

Several mill buyers who have been purchasing reeds low in price on an "initial-cost" basis have discovered that it is **more economical** to pay a little more money in some cases and get EMMONS REEDS.

For Emmons Reeds Last Longer—HOLD their Accuracy—take continuous production punishment, even deep shuttle markings and 'stay on the job.' Proving that on a **cost-to-use** basis a buyer gets more for his money in Emmons Reeds.

CUSTOM MADE

Furthermore, Emmons Reeds are Custom-Made—built to your own specifications—built to FIT the weave. The result is improved "cover"—a reduction in seconds and rejects due to spread dents, roughness of the surface or poorly polished wire.

MAKE A TEST

Regardless of the Reeds you are now using—or the price you are paying, try Emmons METAL OR PITCHBAND REEDS and note the improvement in both the quantity and quality of production. See if these improved reeds are not more economical to USE.

Write; or telephone or telegraph collect, if you need reeds in a hurry. Quick deliveries to any mill in the United States.

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LAWRENCE, MASS.

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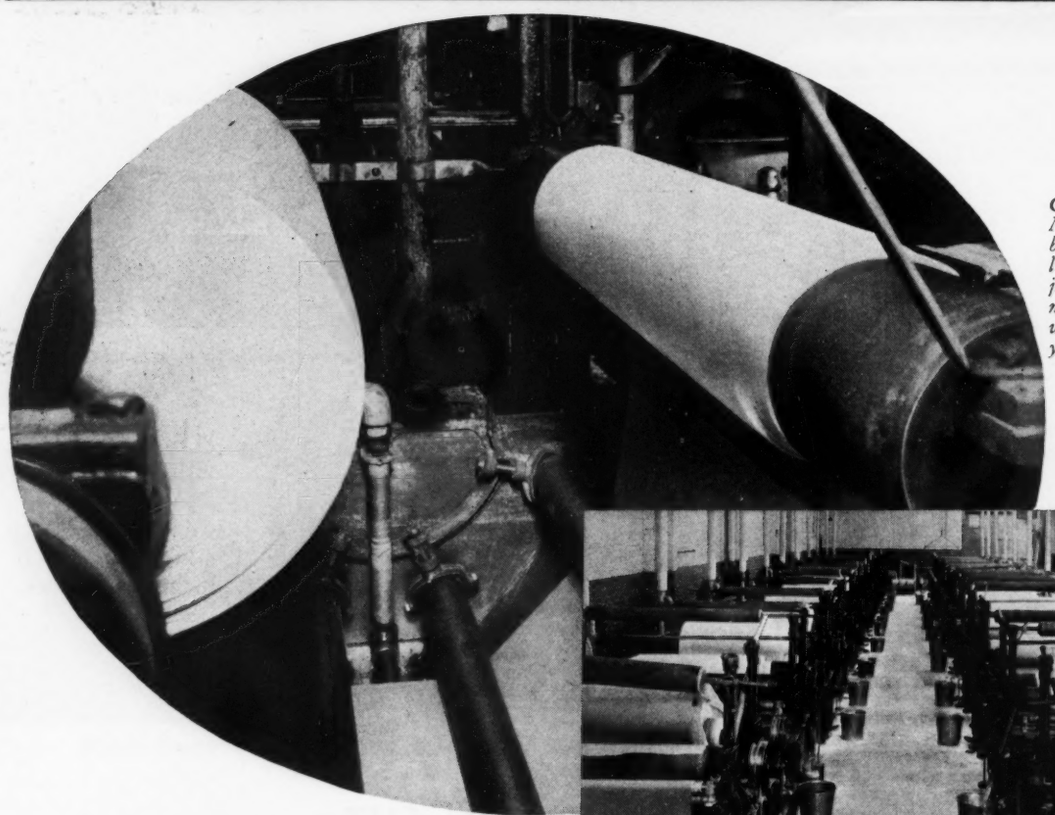
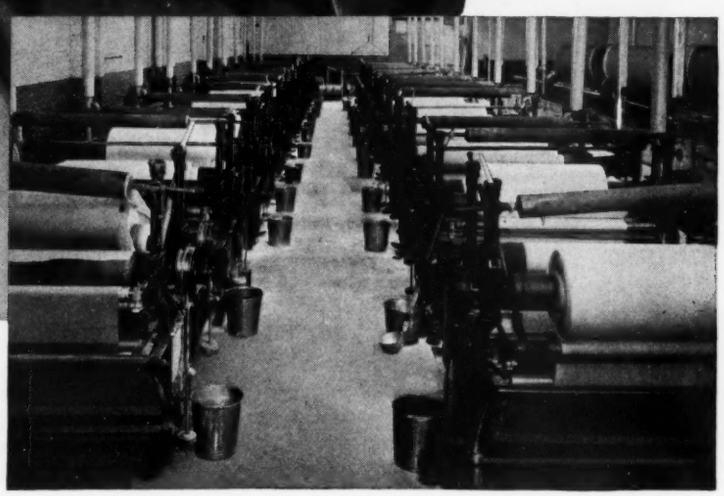


Close-up showing Monel Metal immersion rolls, cast bracket, heating pipe and linings in one of the 24 dye jigs in the main photo. This machine shows no sign of wear after more than 6 years' use.



24 Monel Metal dye jigs, in use from 2 to 6 years, at the plant of the Maupai Dyeing Co., Inc., West New York, N. J. Linings are of 20 ga. (.037) Monel Metal sheet, locked seam and silver soldered. Immersion rolls, cast roll brackets, roller bearings, heating coils and accessories are also Monel Metal.

...and why not...when dye jigs are MONEL METAL?

"SIX years you say these dye jigs have gone? Why that's not so much for *Monel Metal*. You oughta see the ones over at *our* plant!"

Just try telling any veteran dyehouse man one of Monel Metal's "success stories," and see if the above isn't the attitude you run up against. Such men don't "surprise" easily on Monel Metal . . . they've seen it at work in the dyehouse for 25 years.

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They have saved their owners money every day of their service: By handling vat colors, direct and sulphur colors, and acetate colors, with precious little time out for boil-outs between different colors. Peroxide bleaching and boiling-off are also part of their "daily dozen."

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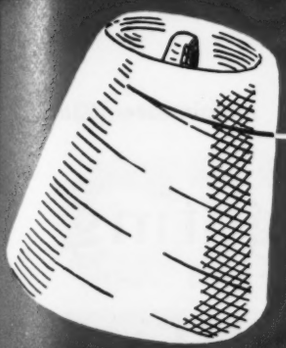
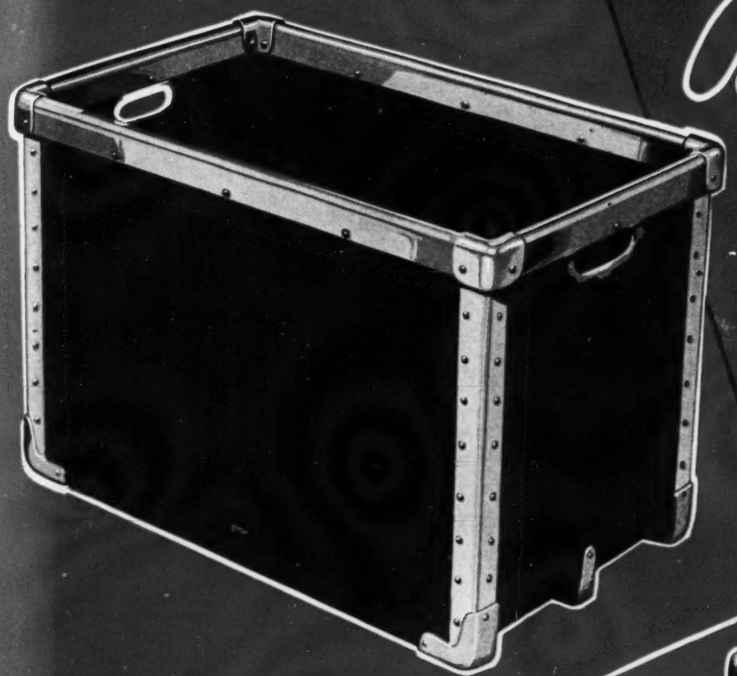


Smooth is the yarn they handle



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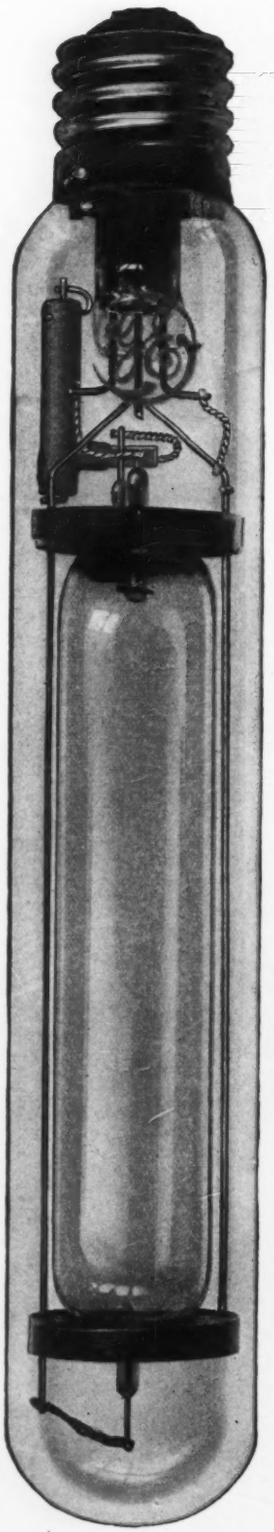

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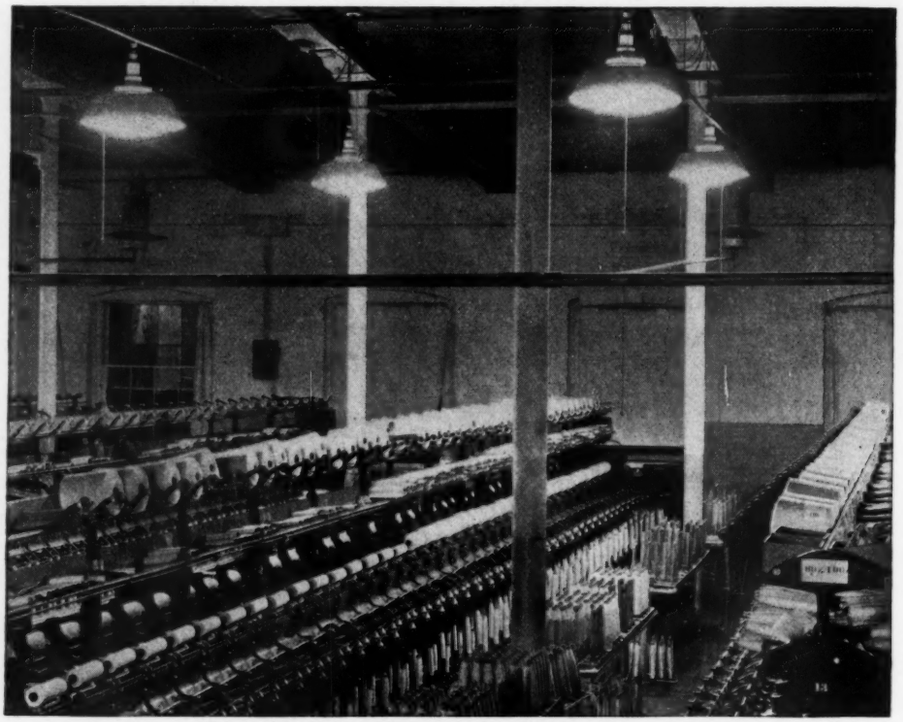

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It is a generally known fact that cotton manufacturing has made tremendous strides in the South and that today the greater portion of all cotton manufacturing is done in the Southern territory.

However, there are facts about other branches of the Southern textile industry that are not so generally known.

FOR INSTANCE:

● Dyeing and finishing in the South have made such great strides that today well over 75% of all goods manufactured in this territory are made ready for consumption by Southern plants.

● Over 64% of all seamless knitting machines are now located in the South.

● Of a gain of 3,496 full-fashioned machines from 1929 to 1935 in the United States, 2,093 or 60% were in the South.

● The large majority of rayon yarn is produced in the Southern states and last year 42.5% of all rayon weaving yarn consumed in the United States was used by Southern mills.

● While the manufacture of silk and woolen goods in the South has been a more recent development, over 225 Southern mills are now consuming silk and over 70 mills are consuming wool.

—o—

The OCTOBER SOUTHERN TEXTILE DIVERSIFICATION NUMBER

In its October Southern Textile Diversification Number, COTTON will trace and interpret the development of each branch of the industry in the South. Leading articles by authorities in their respective fields portraying the progress being made will make this issue of interest and value to all connected with the textile industry.

Advertising forms close September 20th. Manufacturers serving the textile mills will want to make space reservations early.

COTTON

1020 Grant Building *(Serving the Textile Industries)* Atlanta, Georgia

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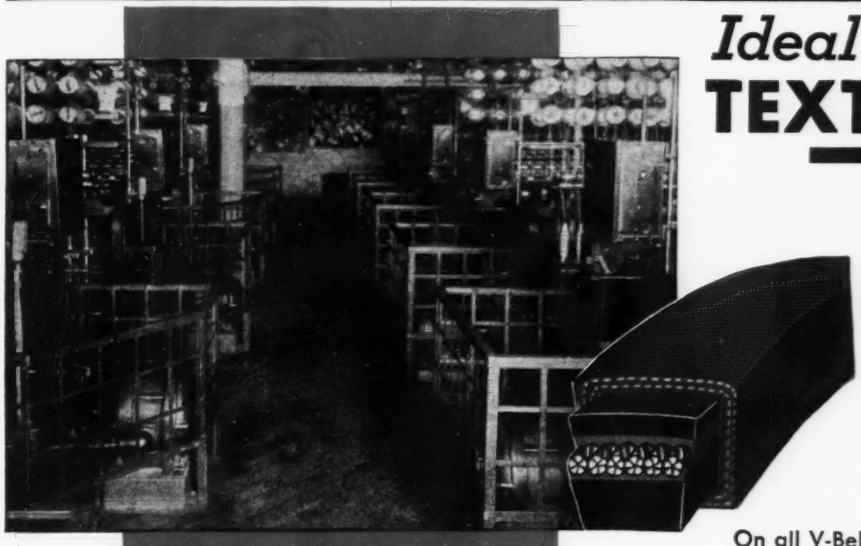
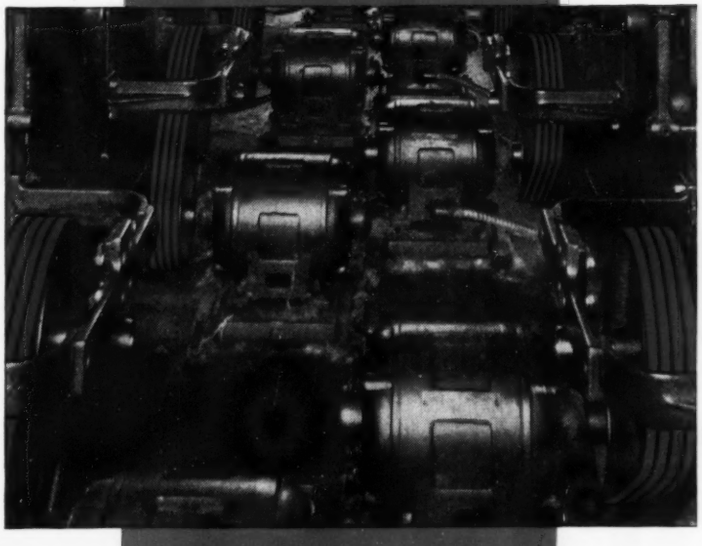


Condor Whipcord V-Belts on Twister Room Drives



Another Condor Whipcord V-Belt textile installation—in limited space

Ideal for TEXTILE DRIVES

HAVE NO INELASTIC STRETCH

On all V-Belt drives, especially in the textile field where smoothness of operation is vitally important, Condor Whipcord V-Belts have proved the superiority of their 8-Point Balanced Construction. Scientifically pretreated to remove inelastic stretch, these belts also excel in flexibility, strength, long life, balance, lateral rigidity, traction. . . . A recent 300-hour Government-supervised test of exceptional severity on a new airplane propeller drive is the latest demonstration of the ability of these belts to stand up under punishing service. At the end of this test, the Government report stated these 6 stock belts "showed remarkably good wear." ●

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4. Maximum Resistance to Structural Breakdown
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8. Correct Lateral Reenforcement.

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Suction Hose
Molded Rubber Goods
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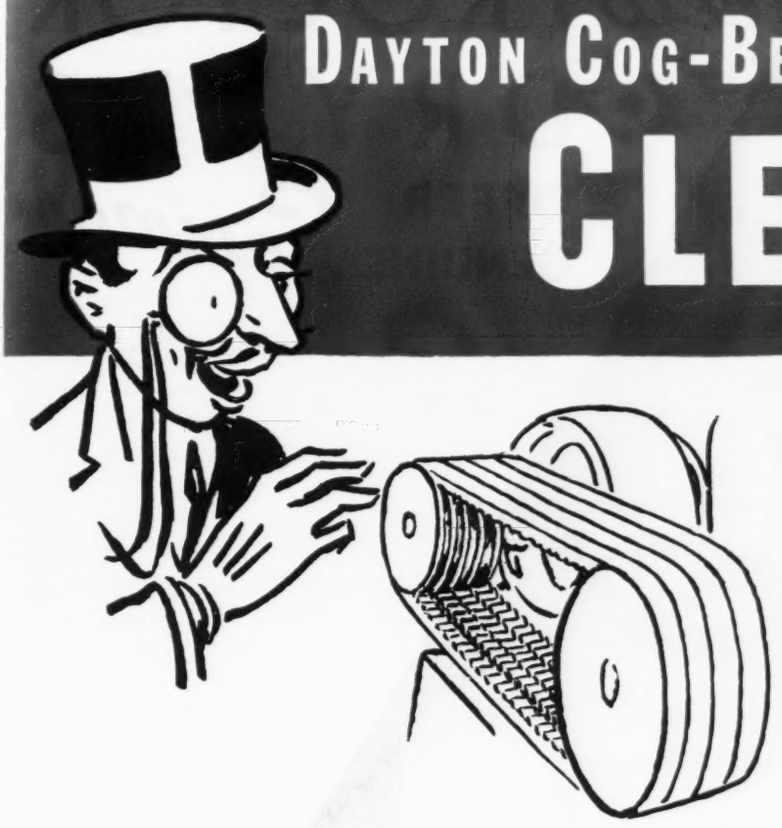

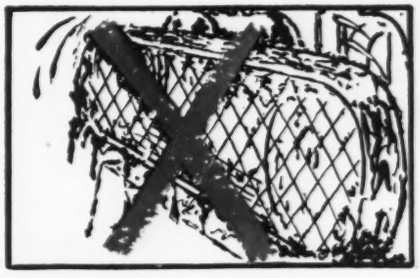

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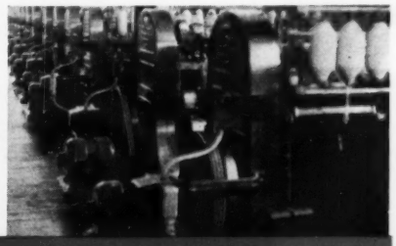

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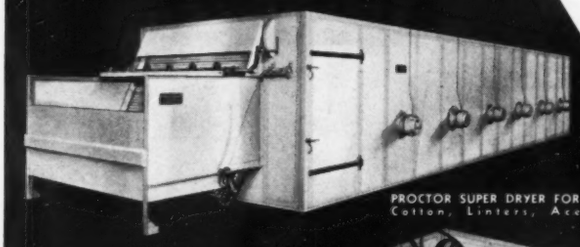

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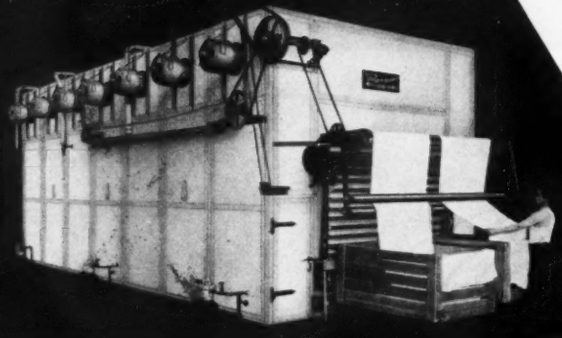

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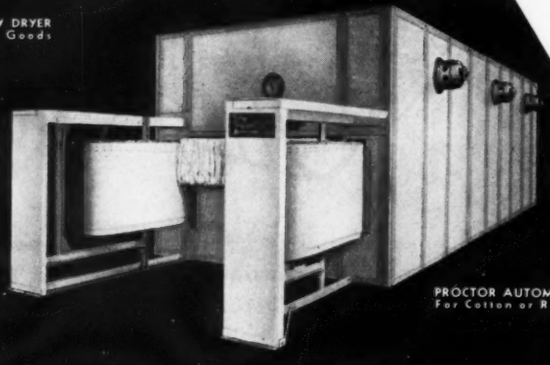

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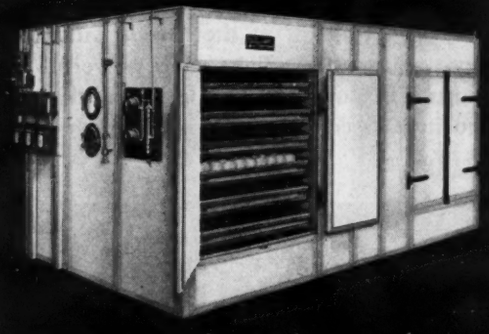

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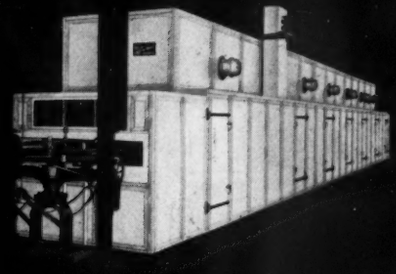

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COTTON

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Vol. 100
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COTTON

September,
1936

Optical Instruments in the Textile Industry

By Everett W. Melson
Bausch & Lomb Optical Company

MORE and more, accurate methods of mill management are being adopted. Previously considered as being too "technical" or "scientific", studies by microscope—all the way from raw material used to finished product, are being accepted and adopted as an invaluable adjunct to careful control.

This article reviews some of the more generally successful applications of optical instruments to the textile industry. . .

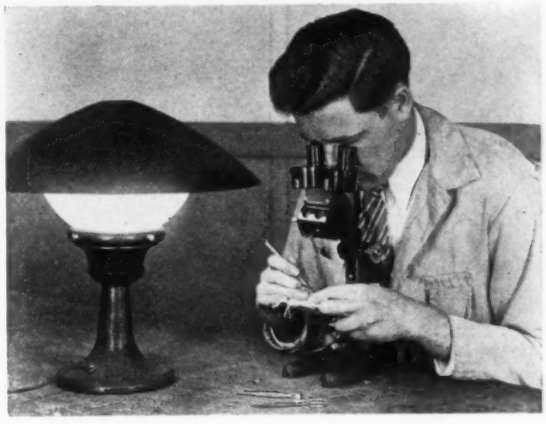
NO INDUSTRY can rise above the level of its own research. As the requirements of industry grow more precise and exacting, the need for standardized processes, equipment, and methods of research become more and more important.

Every textile manufacturer is confronted with the development of sudden irregularities in his attempts to turn out a finished product. These irregularities are frequently due to physical or chemical damage of one sort or another. To locate these troubles quickly and trace them to their source frequently calls for all the resource of a laboratory worker. If the mill has a laboratory it is likely to have a microscope. It should also have a camera for photo-micrographic records.

Used in conjunction with various chemical reagents, the microscope reveals many obscure phenomena of the fibers and many imperfections in fabrics that would be wholly imperceptible to the naked eye. Microscopic analysis of textile materials embraces a wide field. The employment of this method for the examination of the surface characteristics of fiber, yarn and fabric is hard to overestimate. Actually, in many cases a fiber can be successfully identified in no other way. Variations in humidification or machine treatment frequently are the causes of rough or fibrous characteristics in the yarn. Dissection of a fabric is sometimes necessary to determine the character of the weave. In all of these cases the microscope performs a useful service.

In addition to the microscope, many textile laboratories find projection instruments useful. With a textile projector, enlarged images of the fabric are projected into a single field of vision where a large group may examine the specimen together. In this way, laundering, weathering and finishing operations may be closely scrutinized. Other investigators study the cross-sections of fibers and the composition of starches.

Microscopic equipment has so many applications that its use is really limited only by the ingenuity of the mill man. There are inexpensive instruments which can be carried in the pocket and used anywhere at any time. In fact, the use of optical instruments in the textile industry began many years ago with the simple magnifying glass or pick counter which is still in wide use. Now we have a small portable shop microscope for the rapid examination or measurement of surface characteristics. It is only a matter of placing the base of this instrument on the surface of a fabric, pressing the illuminator button and looking into the eyepiece, to examine a fabric for surface texture, weave and fiber identification.



Illustrations, courtesy Bausch & Lomb Optical Co.

Studying a sample of fabric with a binocular microscope giving three-dimensional enlarged view . . . . . .

Another link between the little hand magnifier

and the compound microscope is the wide field tube —a complete wide-field, low power microscope. Whenever the work demands more careful observation, greater working distance and higher magnification than the hand lens, this instrument, equipped with a handy tripod, permits the examination of surfaces with a large section of the specimen in view.

The present uses of optical instruments indicate that they are grouped somewhat as follows: first, instruments that are essential for control and inspection; second, those which are needed by the larger companies for basic research. Many of these instruments, however, will fall in both groups.

Fabric examination with the microscope entails some variation in the procedure usually adopted for the ordinary specimen. Samples are relatively large, and their surfaces are rarely sufficiently confined to a single plane to be within the depth of focus of moderately high powered objectives. This accounts for the favor in which the wide-field binocular microscope is held among textile manufacturers. With this stereoscopic instrument, not only is the depth of focus ample, but the very great working distance, compared with monocular types, give it added usefulness in the plant as well as the laboratory. No special training is required for the manipulation of this instrument. The image it produces is not reversed nor is the direction of motion.

A projector which magnifies, projects or photographs fabrics, disclosing . . . . . .

Dissecting Yarns, Identifying Weaves and Fibres

This type of microscope is extensively used for the dissection of yarn; for the identification of types of weaves, fibers and mixtures. It is equally useful in the investigation of lenos, pile, carpet, knitted and lace structures, and the extent of fulling or felting. Another virtue of the binocular microscope is its usefulness in the factory for examining knitting needles and sinkers, heddles and reed wires. Sometimes the manufacturer can cut his inspection time in half by the substitution of a binocular microscope for a hand magnifier. Losses by defects are greatly reduced by closely watching the start of each bolt at the loom. A section may be cut across the complete width of the fabric and carefully inspected under the microscope. If errors are detected an immediate adjustment of the loom can be made.

The Work of Farr and Eckerson

A good compound microscope is an absolute necessity in the laboratory if anything is to be learned about the structure of fibers. The recent work of Farr and Eckerson is an example. The textile industry has had to assume that the cotton fiber was pure cellulose and chemists have been at a loss to crystallize this substance which they believed to be only cellulose. They were equally unable to dissolve it with any ordinary solvents, to tell its molecular weight or to evolve its structural formula.

Now, however, with the aid of powerful microscopes, Mrs. Farr and Dr. Eckerson have been able to look into the cells of young cotton plant fibers. "In the cytoplasm," says the report, "they saw large numbers of ellipsoid particles remarkably uniform in size, both separate and in beadlike strands. In the outer portions of the cells the chains were longer, and in some cases the particles were so closely pressed, end to end, that they had lost their separate identity. These strands of fibrils affixed themselves to the outer wall of the cell and, as time went on, other fibrils attached themselves to the first layer, the final thickness of the wall depending upon the number of fibrils laid down."

From the first moment of their formation, apparently, these little particles are enveloped in a thin viscous film which acts in the same way as if a brick were produced with a coating of mortar. In fact, the plant's cellulose wall is singularly like a masonry wall, the cellulose particles being the bricks and a complex pectic substance the mortar. The workmanship is so perfect that no joints between bricks and mortar are evident. The nature of this wall was discovered by putting cotton fibers into strong hydrochloric acid which destroyed the cementing material and allowed the particles to fall apart.

Other investigators have shown, through the aid of the microscope, that the cell wall is not a homogeneous product consisting of one sort of molecules but owes its special qualities to substances organized in structure and form, which are differentiated through the various plant families. Ludtke suggests that the fact that nutrition and environment will materially influence the formation of the various components offers the possibility of growing pulp and cellulose in larger quantities or of a better quality.

By the destruction of the skin substance of neutral fibers, which in a mechanical or chemical manner holds the single units together like a glue, the fiber suffers in degree of strength. Fibers will often show the phenomena of dislocation or shifting in the cell wall. The fibrils thus become visible by the release of the adhering substance. These spots, or flaws, are more exposed to chemical or mechanical influence and

to disturbances in consequence of their enlarged surface. Swelling agents are also more effective at these spots.

In the case of cotton, efforts have been made to increase the properties of the material by the artificial production of an adhering substance. This is done by mercerizing. Under the influence of the caustic, a glue is produced from the carbohydrate, or cutin-component. This glue proves its effectiveness in increased strength after having been dried under tension. This indicates that not every change necessarily means an adverse effect on the properties. The answer to this question depends on the purpose for which the material is to serve. It is clear, also, that the permeability as well as the acid character of the skin substance influences the dyeing properties greatly and it is therefore of great value to study the preliminary treatment of the textile fiber microscopically.

Determining the Maturity of Fiber

The determination of fiber maturity by means of a polarizing microscope is one of the means which the cotton mill may now use to judge the vital factor affecting the spinnability of their material. With the acceptance of this system of classing cotton, the microscope may come to serve an every-day purpose in the mill.

Cotton classing today is based on the personal judgment of an experienced classer, but something more accurate is desirable. The polarizing microscope offers a practical means of judging the character of cotton and will readily detect differences in value which might escape the cotton classer. Strength, uniformity, and spirality, which are components of what is called "cotton character" are dependent upon the maturity of the cotton.

Under the microscope the appearance of a matured fiber is a long flattened tube with edges round and thicker than the center. The fiber is twisted spirally like a ribbon, this effect being more evident in matured fibers. Unripened fibers show the center part filled. The edges are more transparent and the fibers have almost no twist. Unripened fibers are hard to dye and are one of the causes of neps.

The fact that cotton fibers are doubly refracting is what makes the polarizing microscope useful in determining their maturity. The apparatus required is a polarizing microscope with a rotating stage. A red selenite filter of the first order is necessary. The microscope should be fitted with a 16 mm objective and a 10X focusing ocular. This will give a convenient number of fibers in a single field of view, and at the same time provide sufficient magnification for easy differentiation of the coloration and extinction effects in the fibers. A rotating stage to which a mechanical stage is attached is essential for controlled manipulation of the specimen. A good condenser of the focusing type with a removable top element placed above the polarizer is desirable. The cross hairs in the ocular should be capable of adjustment by rotation to a fixed position of 45 degrees with the planes of vibration of polarizer and analyzer. A constant light source, identical for all determinations, should be used.

The method of evaluating the maturity count, suggested by Schwarz, is to arrange the fibers substantially parallel with each other and with the slow vibration of the selenite. Each fiber which is clear purple or deep blue, or a combination of these colors in alternation, along the entire visible length in position 45 degrees parallel is counted two demerits. These fibers are immature and if rotated into the 45 degree perpendicular position, become orange or yellow. As they pass the planes of vibration of the polarizer and analyzer they turn to the same color as the background, or "extinguish."

A fiber appearing partly blue or blue-green, or both, which upon rotation to the 45-degree perpendicular position becomes yellow is partially immature and is counted one demerit. Fibers that are yellow or yellow-green throughout their entire length, and

Making photomicrographs for protection in disputes, illustrated records and reports, sales material, etc. . .

which remain this color when rotated to the 45 degree perpendicular position, are mature. These are not given any demerits but are counted toward the total number of 50 to be rated for each test. If all 50 fibers were immature, the demerit rating would be 50 per cent. If all were mature, the demerit rating would be 0 per cent. If a maturity count is desired, the demerit rating is subtracted from 100 per cent. Obviously the demerit rating will be a combination of both immature and partially immature fibers.

Extensive tests have shown that indigo and blue predominate in the weak immature fibers and that the matured strong fibers show green, yellow-green and yellow. Since no lot can be made up entirely of fully matured strong fibers, it becomes necessary to have a practical scale for classifying the cotton fibers studies. The following procedure has been suggested by Stevens: Ten consecutive fibers are classified from each ten slides. If a fiber shows a continuous length of indigo, appearing in the field to the eye to be 3/16 inch or more, it is called "highly immatured". If a fiber shows a continuous length of blue, appearing in the field to be 3/16 or more, it is called "unmatured". If it is a continuous length of green or yellow-green, it is called "matured". It will be noticed that the unmatured fibers are at the blue end of the spectrum

and that, as the fibers mature, they approach the red end.

As the fibers are classified they are marked under one of the preceding headings. After the ten slides have been tested, the column of figures below each heading is added. Since 100 fibers have been examined, the totals will be in percentages. This method shows a very good and exact cross-section of the maturity of cotton.

The microscope can be applied directly to many quantitative determinations in connection with textile analysis, but its major function is qualitative. Accurate measurements of microscopic objects are of constantly increasing importance. Microscopic determination of the thickness of the wall and the cross-sectional shape and area, together with the fiber length and number of convolutions per inch, are often made. Spinning qualities become an illusive factor if quantitative observations are lacking.

Determining the maturity of cotton fibers by the use of polarized light . .

The ocular micrometer is an inexpensive and useful measuring device. It consists of a thin glass disk carrying a finely ruled scale, usually about 5 mm long. The initially magnified range of the object under investigation is actually existent at a certain plane in the ocular and at this point a diaphragm is inserted. If the eyepiece micrometer disc is placed, scale downward, on this diaphragm, the upper lens of the ocular having been removed for the purpose, it will closely coincide with the image formed there. Since the upper lens of the ocular—when returned to place—is focused on the diaphragm, it is evident that both the micrometer scale and the object will be simultaneously in focus and similarly magnified, and that the scale will appear to the observer as if superimposed on the object.

In the inspection of knitted and woven fabrics, there are many defects found that require correct analysis in order to locate the cause; to apply the proper remedies; to prevent heavy losses, delays in mill operation, and to avoid second class fabrics. In such cases it is often desirable to show a group of department heads a defect to determine whether it is a mechanical, manual or raw material defect and to decide what and who is responsible for it. The usual procedure in studying a defect is to place it under the microscope, find the magnification that will clear it up and shift the fabric until the whole defect has been studied. Frequently it is necessary to make photomicrographs and study them to arrive at a conclusion. Since this method involves time, and often seriously delays the remedy, there has been developed an ingenious textile projector which facilitates analytical work greatly, enabling the factory head to quickly eliminate doubtful causes and concentrate on the likely ones. This instrument will permit the construction of a fabric to be determined and the loop formation traced without unraveling or dissecting the fabric. The advantage over the microscope is that a larger specimen can be examined and it may be shown to a group simultaneously. In the new instrument, not only can the specimen be magnified and projected but photographed as well. It thus enables proof of the findings to be made.

Another useful instrument of projection is the silhouette, or transparent material projector. The textile specimen or the slide is laid directly upon the horizontal table. The light passes up through the center of this table and is reflected by the mirror over the projection lens. The mirror may be rotated to project the image on any wall of the room and the operator may work from any side of the projector.

The microscope is usually considered a direct observation instrument and its possibilities as a projection instrument are overlooked. But even with such a simple accessory as a Euscope, an image may be projected on a screen where it may be studied comfortably by one person or a group of persons.

Every investigator requires records, not only for his reference in the future but to import the results of his work to others. Such records should be complete, easily understandable, and at the same time susceptible of independent study and interpretation by other workers. Suppose it is necessary to preserve an accurate record of a perishable mount, or to record the instantaneous condition of a specimen undergoing progressive treatment, as for instance chemical reactions, then a good photomicrographic apparatus is required. In photomicrography, it is usually only necessary to substitute the optical system of the microscope for the camera lens. The elaboration found in any set-up of apparatus is due to the fact that the whole optical system from illuminant to final image must be in perfect alignment. The camera and microscope may be used in either the vertical or horizontal position, and where both methods are interchangeable a stand with a special inclination joint is needed.

The development of textile microscopy is growing. Progress is being made in stereoscopic photomicrography; motion picture photography, or cinephotomicrography, and in the analysis of microscopic and submicroscopic fiber structure. The textile industry thus has available optical tools for a more thorough study of the materials and processes with which it produces.

Bell Presents an Encouraging Analysis of Conditions in Cotton Textiles

THAT 1936 has brought a return of relative economic prosperity to the cotton-textile industry is indicated in a comprehensive statement issued late in August by W. Ray Bell, president of the Association of Cotton Textile Merchants of New York, based upon a thorough study of recent developments and current trends. Business activity, explains Mr. Bell, is at the highest level since July, 1931, and is now at about 77 per cent of normal. This registers a gain of 61 per cent over the 1933 depression low. The textile industry is contributing its share to the general economic rise as shown by indexes of spindle activity, mill stocks on hand and orders for future delivery. There has been a return to the customary procedure of ownership of goods and contracts with the elimination of artificial elements that have been a hazard to manufacturing and marketing in recent years.

Important developments that have exerted a favorable influence on the return to usual practices in textile goods marketing, as described by Mr. Bell, are: (1) The passing of the processing tax. This tax acted as an abnormal element of artificial cost which was a continual contention between buyers and sellers during 1934 and 1935. (2) The elimination of price qualfying clauses in contracts. This means a return to the point where the business judgment of both buyer and seller may be based upon a proper appraisal of known factors wherein each may assume his ordinary risks. (3) The return of a more normal situation in the raw cotton market with the removal of the government from the futures market. The holdings of the government are still some 3½ million bales, but it is understood that there will be a minimum of interference from now on. (4) The restoration of value in cotton goods as demonstrated by the public that it will buy goods at present prices. (5) The confidence that in general producing units will adhere to the maximum operating schedules of 80 hours per week. (6) The shortage of reserve stocks. (7) The evidences of confidence, more than all else, as measured by actual sales of textile products.

Spindle Activity

For the first half of 1936, cotton textile operations, as measured by active spindle hours, were 13.85 per cent greater than for the same period of 1935. The total spindle hour activity was 43,248 million hours of work for the first six months of 1936 compared to 37,984 million for the same period last year, but the monthly average of participating spindles was somewhat lower, being 23,124,380 against 24,052,373 during 1935. One million spindles have gone out of existence since the first of the year, which reduces the total spindleage in place, June 30, 1936, to 28,311,834. Of these, over 5 million have been idle each month.

Industrial, household, and other heavy fabrics have shown a great increase the first six months of 1936. The estimated production of woven cotton cloth for the first half of 1936 is 4 billion square yards. This figure includes all types over 12 inches in width. According to these figures the production this year will be about 8 billion square yards. This compares favorably with the 1926 and 1928 yardage which was just under the 8-billion mark. The current rate of production was actually attained in the last quarter of 1935.

W. Ray Bell

Stocks Absorbed

The usual summer curtailment program has been eliminated this year because of a practically complete absorption of mill stocks in many branches of the industry. Unfilled orders have reached record yardages; in 20 of the most important groups of carded gray goods at the end of July, the decline in mill stocks was over 134 million yards. Unfilled orders in this group were 278 million yards, an increase of 144 million yards over 1935. In 18 groups of combed gray goods, stocks were reduced by 25½ million yards and unfilled orders increased 111 million yards. Other groups showed increases of like nature. Combined, these groups show a reduction in mill stocks amounting to 230 million yards, and an increase in unfilled bookings of 528 million yards.

For the textile industry, the most reliable measure of final consumption is the growth of retail sales. This has been a cumulative experience since 1933. Private reports show an increase in cotton goods sales. It is significant that the firms which rank among the largest distributors of cotton goods have achieved the highest rates of increase in dollar volume of sales, e.g., Penney, Ward, and Sears Roebuck.

Activity in channels of distribution can be attributed in many instances to the converting trades, the garment and apparel trades, and the work clothing manufacturers. Operating on a hand-to-mouth basis since the end of 1933, these establishments have kept low stocks but are now replenishing them and having them depleted again. The hot and lengthy summer has been of material influence in shaping the desires of the consuming public to a larger use of cotton clothing and other apparel. Examination of national economic developments in fields more distant from the cotton textile industry shows progress in business of dry goods distribution.

Generally speaking, there has been an increase of nearly 10 per cent in the national income, factory employment has the highest comparative index since 1930, payrolls have risen to new levels, bank deposits show an increase, and savings deposits picture a gain over recent years. Every index of trade and business activity shows that people have money and will spend it. Cotton textiles are getting their share. The seven lean years are ended.

An Air-Conditioned Spinning Room

By Newton G. Hardie
Superintendent, Inman Mills, Inman, S. C.

A SOUTH CAROLINA mill man describes here a recent installation of air conditioning equipment that enabled him to achieve results in creating a more desirable condition in his spinning room. Advantages secured in better working conditions and increased efficiency and comfort are described.

We hope to present later other specific examples of advancements in this interesting and progressive trend in textile manufacturing.

WE HAVE not only heard a great deal about the heat this summer, but most of us have actually felt it; therefore, anything pertaining to cooling a cotton mill should at this time be interesting to all engaged in the textile industry.

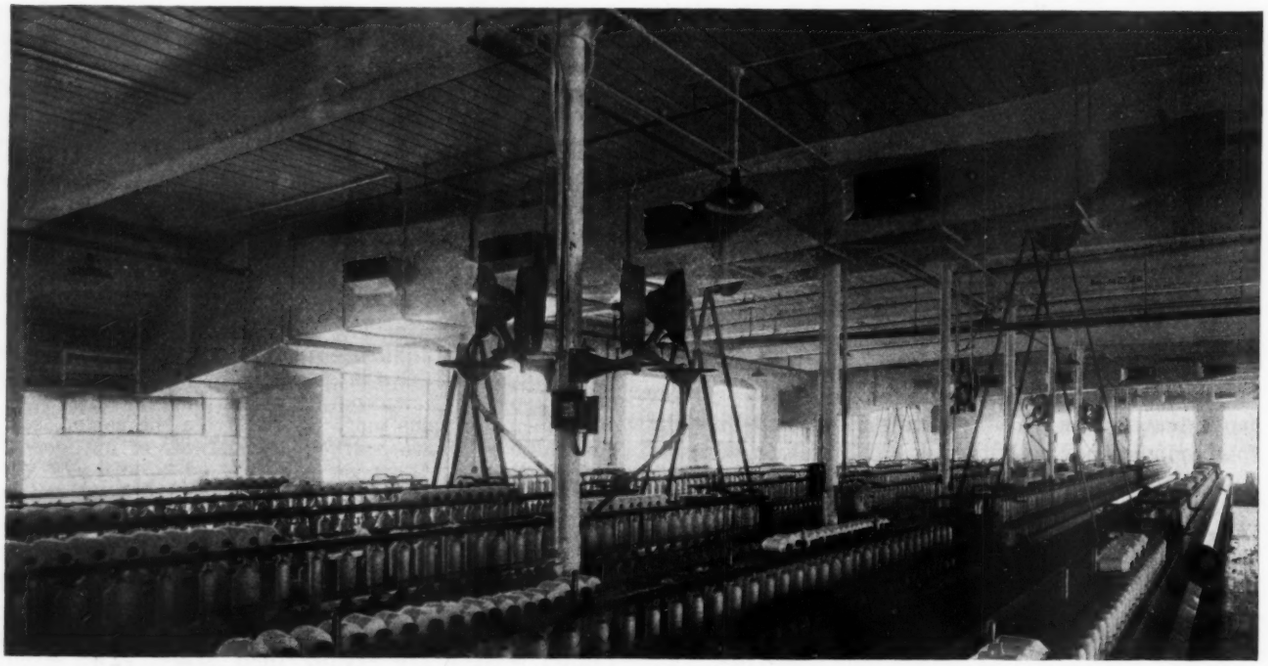
The air conditioning equipment to be described here was the first installation of its kind ever made in a cotton mill. This unit completely air conditioned a spinning room of approximately 150x75 feet, containing 10,368 long draft spinning spindles driven by overhead two- and four-frame drives.

The method employed in air conditioning this room was as follows: Six galvanized iron trunks were installed, three on each 150-foot side of the room. These trunks run from the windows almost to the middle of the room and are approximately 35 feet in length. Each trunk has two sets of dampers in the window, one to control the re-circulating of the air in the room, and one to bring in outside air. These dampers work together, but when the inside dampers are open, the outside ones are closed and vice versa. Each trunk has five openings on one side only, and the three trunks on one side of the room have the openings pointing in one direction while the three on the other side point in the opposite direction. A circulation up one side of the room and down the other is thus secured.

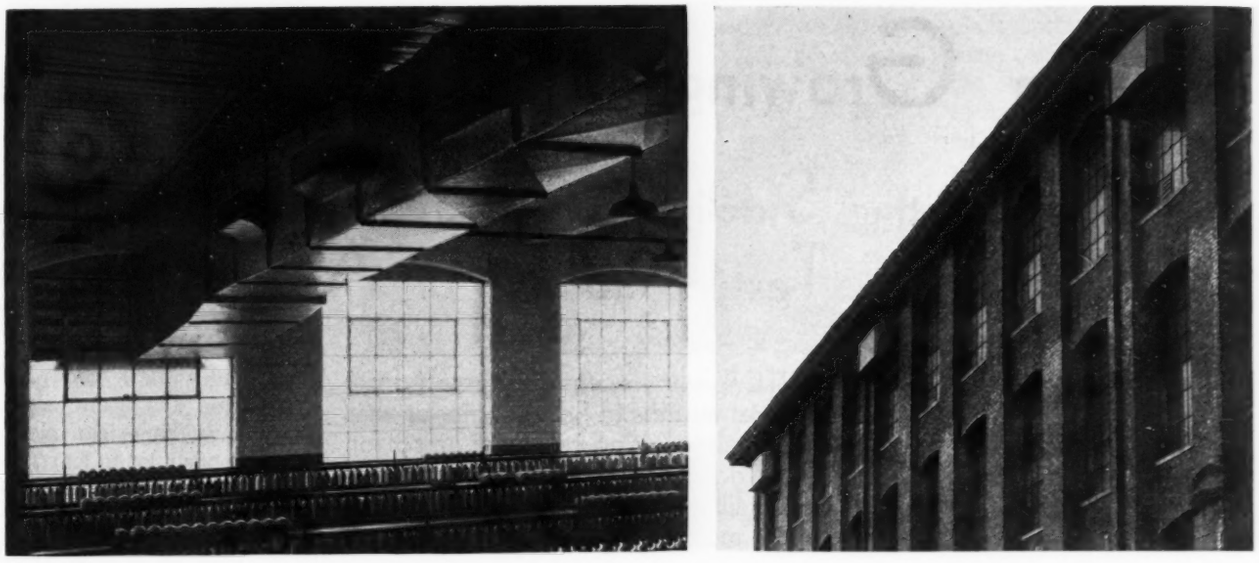
There is a fan in each trunk about four feet from the window which takes in either fresh outside air or re-circulated air and forces it out the five openings along the trunk. This fan is driven by a 1½-hp. motor, and each trunk has a capacity of 13,500 cubic feet per minute, which in turn gives the room 25 complete air changes an hour. To prevent the air pressure from going too high, 36 exhaust dampers are placed in the windows. Each exhaust damper takes the place of one pane of glass in the window. Since the shutters are on the outside of the damper, as the inside air pressure tends to increase, these shutters open, thereby nearly equalizing the room air pressure with that of the outside. When the inside pressure drops to the same as the outside pressure, these shutters automatically close by their own weight.

The trunks do the work of circulating the air, but 18 "L" type Bahnson humidifiers produce the humidity. All the air from the humidifiers travels in the same direction as that from the trunks, thus avoiding cross drafts and "wetting down" at any spot in the room.

The room is controlled for relative humidity, room temperature and dew point. The relative humidity



A general view of the spinning room, showing the ventilating ducts on one side of the room



Left, a close-up of one of the ducts and dampers; right, a view of three of the outside dampers

can be controlled within two or three points of the figure desired; for example, if a relative humidity of 58 per cent is desired, the humidity chart seldom varies up over 60 per cent or down under 56 per cent. This is regulated by a master control placed at a suitable spot in the room. The master control operates three water pressure valves set as follows: Low valve at 5 pounds pressure; middle valve at 37½ pounds pressure; and high valve at 60 pounds pressure. Up to a temperature of 88 degrees, the middle valve operates intermittently to hold the percentage of relative humidity for which the master control is set. (Of course, the humidifiers run all of the time and only the water is cut off and on by this valve.) Above 88 degrees room temperature, the low pressure valve is open all of the time acting as a shock absorber for the high pressure valve which also works intermittently to hold the desired relative humidity.

The room temperature is governed by the ventilating fans and the trunk dampers. The fans are controlled by a room thermostat operating a step controller which starts and stops the six fans. The fans work in pairs, those opposite each other operate together; for example, Trunks No. 1, 3 and 5 are on the same side of the room, and Trunks No. 2, 4 and 6 on the other. When the temperature of the room begins to rise, the step controller starts the fans in Trunks No. 1 and 2, and if the temperature continues to rise, the fans in No. 3 and 4 turn on and next, those in Trunks 5 and 6.

When the fans are started, the fresh air dampers are partially opened. As the temperature continues to rise, the fresh air dampers continue to open until the fans are handling 100 per cent outside air.

When the outdoor temperature is above the dew point temperature in the room, the dampers are regulated by a controller exposed to the room temperature. This controller operates a modulating motor on the shaft of which are attached six potentiometer switches. Each of these switches is connected to a modulating damper motor, one for each duct. As the room temperature rises, the controller calls for an increasing amount of fresh air which is supplied by gradual opening of the dampers through this hook-up.

A second controller is exposed to the air inside the duct. This controller is normally inoperative during hot weather but if the outdoor temperature drops to such an extent that the temperature of the air inside the duct approaches the dew point temperature in the room, it comes into action. The two controllers are inter-connected in such a way that when the duct temperature drops within 3 to 5 degrees of the room dew point, the fresh air damper begins to close. This effectively eliminates the possibility of condensation on the duct and makes it possible to obtain the maximum cooling effect that can be secured without danger of sweating. Both of these controllers are located on one of the ducts whose fan is the first to start and the last to stop.

This complete system was designed and installed by The Bahnson Company, Winston-Salem, N. C.

The results obtained from installing this air conditioning system have amply justified it. Before this equipment was in operation, it was not unusual after four or five hours' running to have a room temperature of 100 degrees even in the coldest winter weather. It is hard to tell what the temperature would have been during this past summer without this system. The highest recorded room temperature on July 27 (our hottest day outside) was 90 degrees, while the outside temperature was 104 degrees in the shade. This comparison was made with two recording instruments checked and calibrated together. The spinning ends down per 1,000 spindles are approximately 25 per cent less than before air conditioning, and the front roll speed is now 5 per cent faster. The quality of work produced is better, and the employees are delighted with the pleasant working conditions.

All in all, we feel, air conditioning of mills is a paying proposition and we think that before many years have passed, mills not air conditioned will be in the minority.

Cotton Growing in South America

An Interesting Sidelight on a Subject of Great Interest to the Textile Industry of America. . . .

A VISITOR who recently returned from several months in South America, has provided this interesting comment on cotton production down there. We believe it will interest all mill men as presenting some sidelights on a much discussed subject . . .

◆ ◆

DURING the past few years of experimentation with crop control, the United States has gradually lost its dominant position as a cotton producer, while foreign cotton growers are gradually increasing their output and further threatening the markets of the American cotton farmer. Brazilian and Argentinian cotton have come very much to the fore in the past few years, and there was a recent report that some Brazilian cotton had been shipped into the United States to a mill that wanted to do some experimenting and see if they could take advantage of the cheaper price of this staple.

There is naturally a good deal of interest aroused among textile mill people concerning the prospects of South American competition with the American staple, and a recently returned visitor to South America has some very interesting comments to make on the future of cotton growing in that country.

There are vast areas of soil suitable for cotton culture in both Brazil and Argentina, but the habits of the people have not encouraged them to take full advantage of their opportunities in this direction. Being tropical or semi-tropical countries, there is little inclination to hard work on the part of the farmers, and while a good deal of cotton has been raised, the South American planter still has a lot to learn before he will be able to produce as good lint as can be had in the United States.

Careful farming is practically unknown except among the Japanese immigrants to Brazil who have gone into cotton planting in a thorough and efficient manner. The average South American farmer seems content to chop a few holes in the ground and plant some seed which he hopes will come up and produce a few pounds of cotton. The pedigree of the seed is a matter of small consequence, and on account of the ginning methods in South America this leads to some very serious complications.

Ginning is not done as it is in the United States, where a farmer takes his wagon load of cotton to the gin and gets his bale to take away. The South American ginner buys cotton from all and sundry who have a small bag of cotton to sell. This is then dumped indiscriminately in a big warehouse and mixed with whatever else happens to be on hand. Whereas the ginning season in the United States is over when the picking season is finished, in South America a gin outfit keeps running until it has ginned all the cotton which has been accumulated in

Photograph of a South American cotton field, made on January 5, 1936

the warehouse. It is easy to see that a bale of Brazilian cotton may contain fibers of almost any length and characteristics.

Brazilian cotton can apparently be produced at a profit satisfactory to all concerned for around 6 cents a pound, and undoubtedly Brazilian farmers are going to turn more and more to cotton raising, and such of them as have any ambition at all will no doubt be stimulated by the greater profits to be had out of cotton as compared with other crops. Sooner or later, the South American planters will learn more about pedigreed seed and careful ginning methods, as well as the proper cultivation of cotton, and will then become a serious menace to the American farmer.

Scene in a cotton field in Argentina. This photograph was made in May 1936 . . .

Spinnable Brazilian cotton at 6 cents a pound would very soon find its way into American mills unless a satisfactory tariff kept it out. However, American cotton would have to compete with this lower priced cotton in foreign markets, and it would seem that the survival of cotton growing in the United States depends largely on just how keenly South Americans wish to plant cotton. If they become enthusiastic about the possibilities, there seems no reason why Brazil, particularly, could not supplant the United States as the principal cotton raising country. There are millions of acres of practically virgin land in Brazil which now have the production fertility common to the southern section of the United States 75 to 100 years ago.

A great deal of the cotton growing in South America has been fostered by American firms which claim they have been more or less forced out of business in this country by the crop policies of the present administration and have had to do business in Mexico or South America in order to employ their capital and organization. Since the development of cotton growing in those countries is partly in the hands of experienced Americans who have been handling cotton and managing plantations for years, it is not at all improbable that the southern cotton crop will be seriously menaced by Brazilian and Argentinian competition within a few years.

Textile Exposition Close at Hand

The management of the Southern Textile Exposition has sent out a printed letter to the presidents and superintendents of all southern textile plants reminding them that the show is only 8 months hence. 300 copies of the letter were also sent to New England mills and others were mailed to exhibitors and manufacturers of textile machinery, accessories, and supplies. The Exposition is practically assured of success because of the large number of leading manufacturers of machinery and equipment that have taken space. It has been announced that the balcony will be used as has been the custom in previous years.

The use of special sleeping cars will begin from Greensboro, N. C., on the north and Atlanta on the south, Sunday night, April 4. These cars will be parked all day in Greenville and will be operated shuttle fashion during the week. Visitors from a distance may drive by automobile to Atlanta or to Greensboro, board a Pullman car, spend the next day in Greenville and return that night. Baggage may remain in the cars all day, thus making hotel reservations unnecessary. The usual arrangements will be made for rooms to house all visitors comfortably.

Laundry Chemistry Manual

The Chemical Publishing Company of N. Y., Inc., 175 Fifth Ave., New York City, has a second edition of *Laundry Chemistry*, a manual for all progressive laundrymen, dry cleaners, chemists, and manufacturers that cater to these industries. It is said to be the latest book on this subject and is written so that anyone without chemical training may grasp the meaning. It is a highly practical book, concisely edited and though it is written in an understandable manner, it sacrifices none of the latest developments in its field. The book contains 118 pages and sells for $1.75. The author is A. Harvey.

Textile Industry Offers Scholarships in Textile School

Workers numbering 220 gathered at the Rhode Island School of Design textile school the latter part of July to take preliminary examinations for free scholarships sponsored by the Rhode Island Textile Association and subscribed for by 25 member mills. The candidates represented every branch of the industry and all the various types of employment. While the majority were young men, there were also a number of young women taking the tests which were conducted by the faculty of the school under William D. Fales, director.

In the group taking the examination were 15 men with all or part of a college education and 52 high school graduates—all now working in textile mills. The preliminary examination was intended to ascertain how well the candidates could think and express themselves, and served to reduce the larger group to a smaller one which will take the final examinations about the middle of September.

It is believed that this is the first time that such a group of mills have banded together for the purpose of furthering the education of its employees.

New Pure Dye Crepe

Winget-Kickernick Company is featuring a new line of slips on which is the new pure dye crepe Sosoft, made by E. I. Du Pont de Nemours and Co., Inc., Wilmington, Del. Made with a broadcloth weave, it is said to be especially soft, yet firm in texture so that it does not shrink in washing. Winget-Kickernick Company are introducing Sosoft in a brochure which traces the various qualities of the fabric to the actual composition of the rayon yarns. It also shows the results of washing tests.

Making a Machinery Survey

The second installment of a discussion telling why and how periodic surveys of equipment should be made; and what to do about it

Part Two—Continued from August Issue

By Richard S. Pope

THE first installment of this discussion, in the August issue, outlined the needs for and general methods of making machinery surveys, and began describing specific illustrations of how to make a survey, and use the information, starting with the opening room and going up through the cards. The present installment continues the application of the idea in the card room . . . . . .

Variation in Length of Wire on Flats

Give the average card grinder a flat gauge with instructions to set his flats to that gauge and it will be generally found that the settings on those flats at their setting point will be to the gauge, but if the flats are moved from their setting point it is likely they will be found either tight or loose. Therefore, the setting of flats is not so much a question of "feel" but is the difference in the length of the wire between one flat and another and the difference in the length of the wire at different places on the individual flats. These variations are not readily found while the flats are on the card, but numerous instances have shown wide variation when the set of flats was on the flat tester, which is part of flat grinding apparatus. Variations of 49/1000-inch have been found between the highest and the lowest flats. Flats have been found with 29/1000 difference between the length of wire from one end of the flat to the other; and flats have been found with a difference of 16/1000 in the length of the wire in the center and the ends on the same flat. No doubt clothing shops could cite instances where the conditions of flats have been found that were worse than these.

An indication of what the variation is in the flats may be seen when the flats are on the card by first setting the five flats to a definite gauge at the five setting points, then moving the flats forward one position so that the second flat is on the front setting stand; after the measurements are made, the flats are again moved forward one position where the measurements are made with the third setting flat on the front stand, and so on until the last setting flat is on the front stand. If for instance, all the flats are set to 10/1000 at the setting points and after moving them forward one position it is found that the second flat in the first position takes a 15-gauge, it is deduced that the difference in the length of the wire is 5/1000; if after moving the flats forward again so that the third flat is in the first setting position it is found that a 7/1000-gauge is the setting, then it is deduced that there is a difference in the length of the wire on the first and third flat of 3/1000 and a difference in the length of the wire on the third and second flat of 8/1000; and so on until all the five flats are checked.

In checking flat settings, it is necessary to have several different flat gauges such as a 5/1000, 7/1000, 9/1000 and 15/1000; by placing two or more gauges in the same handle it is possible to get different combinations such as putting the 5/1000 and the 7/1000 together to get a 12/1000, etc. The machinery manufacturers can furnish gauges of almost any thickness for a small cost.

A heading on the form for the milled ends of the flats has a close connection to the setting of the flats as close inspection will show that there are shoulders made where the flats slide over the flexible bend. As there is a difference in the hardness of the metal of which the flats are made, it logically follows that there will be a difference in the amount of wear on the milled ends, consequently there will be a difference between the settings of the flats as it is not possible to set the bend for every flat.

There may be some argument that no matter whether the milled ends wear or not there will be no difference in the relative position of the flat wire to the cylinder wire as the grinding former holds every flat the same distance from the grinding roll and any excessive wear on the milled end will allow the flat to come closer to the grinding roll and in so doing will grind any difference in the length of the wire so the wire is evened. The problem is that the grinding former covers almost all the surface of the milled ends, therefore the shoulders will control the position of the flats to the grinding drum, thereby making the length of the wire on every flat equal to the relative distance from the surface of the milled ends to the grinding roll, but, when the flat is in the open position, the wear on the flat controls its position to the cylinder.

The shoulders may be felt or seen and may be measured by inserting a gauge that gives the exact setting, then by moving the flat to the right or the left as far as it will go, probably 3/16-inch, and inserting a gauge that gives the same feel as the first, the difference may be ascertained in the amount of the shoulders or the amount the flat has worn at its working surface. The solution of the problem is to mill off the ends in a milling machine, but to maintain the pitch of the flat from heel to toe it might be a more delicate job than the average mill machine shop could do; however, the condition can be improved by using a fine file and removing the shoul-

MACHINE	MAKE	AGE	R.P.M.			
			CYL.	LICKER-IN	DOFFER	
AVERAGE CONDITION						
REPLACEMENTS						
COST OF REPLACEMENTS						
REPAIRS						
LABOR COST						

	WEIGHT OF SLIVER	WEIGHT OF LAP	DRAFT	BEARINGS WORN	JOURNALS WORN		
					CYL.	LICKER-IN	DOFFER

Fig. 3. Showing a portion of the suggested form for use in making a thorough survey of the card. (See August installment for previous forms.)

ders where they have formed next to the wire on the outer end. If and when the shoulders are removed, it is necessary to grind the flats for a long period on the cards or true them on a regular flat grinding machine because the flat will take a new position on the former which will allow the wire to be closer to the grinding rolls. In any event, if the ends are re-milled or filed it is more than likely that the flat both in grinding and at work will be held in the same relative position.

If the flats are removed and ground on a flat grinding machine it is a good idea to soak the chains in oil. The stiffness of the chains and the improper tension while on the card has been the cause of as many as seven flats riding off the bend at the back of the card; with 44 flats in working position it is seen that each flat out of position is approximately a 2½ per cent loss in carding effect between the flats and the cylinder. At the time the flats are off it is a good idea to draw-file the flexible bend on the outside and inside edges to remove the shoulders made by the wear of the flats. This is also a good time to re-set the front and back plates; a check of these settings has found them to be off as much as 128/1000.

Gauge the Trumpets

The gauging of the sliver trumpets is done with a gauge made for the purpose by the machinery manufacturers; a difference in the size of the trumpet gives variations in the condensation of the fibers in the sliver and a difference in the tension between the calender roll and the trumpet, the result of which is variation in the weight per yard.

If, in going over the condition of the cylinder and doffer fillet, it is found that a card has loose or raised wire, it should be noted under the heading on the report that the fillet is to be re-drawn; this should also be done where the clothing is loose enough to be moved the slightest amount.

The amount of jammed wire or the condition of the clothing with respect to the jams could be expressed as *Good, Fair, Bad,* etc., or the amount of jammed wire could be expressed in terms of per cent. If the jams have not been picked up they should be noted as new jams so the grinder can fix them as soon as possible. Jams may easily be detected by the scarcity of cotton embedded in the wire. It is an opinion that little or no carding is accomplished at a place where no fiber is embedded in the wire. If this opinion is true then some of the loss in carding capacity may be estimated by the amount of jams in the filling. The remedy for the jammed condition is to take extra precaution in allowing the tail ends of the laps to go into the card, also to take care when the card is stripped in, not allowing the cylinder to strip the brush after the brush has stripped the cylinder; there is a possibility and evidence that this bunch that is taken off the brush will cause as much damage as the tail end of a lap.

Dull wire might be from lack of grinding or from the wire being faced. Hooked wire is the result of grinding too heavy or grinding loose wire or loose clothing.

After all the headings have been filled in, the averages of the items that it is possible to average may be placed at the bottom of each column, viz., average cylinder speed, average doffer speed, etc. Under headings of settings, an average can be made by dividing the total settings checked into the number of settings found to be at standard. For example, if the feed plate settings are checked on 20 cards and eight are found to be set at the standard, then the operating condition at this point is 40 per cent of standard. By the same procedure, if 20 cards are checked for flat settings and of the 100 flats checked it is found that 25 flats are not to standard, then the operating condition at this point is 75 per cent of standard. It is not to be interpreted that the flats are necessarily doing 75 per cent of the work that they should, but that the management has decided that a certain setting is what they want to give desired results and for some reasons the flats have been found in this condition.

Under the averages there should be a line for replacements that would show the totals for the items that are to be replaced such as, new wire on the licker-in, new cylinder and doffer fillets, trumpets that have been found off standard, etc.

Still another line should show the estimated or actual cost of the replacements.

Remarks on Summary in Survey

The person making the survey has a better conception of the conditions than others who have only the cold figures, therefore it is a good idea to write a brief summary describing what is seen or encountered. To quote from an actual summary:

"There is considerable room for improvement in the condition of these cards. In particular, it is noted that the flat chains are in need of attention. In some instances there are several flats that do not touch the bend because there is not enough tension on the chain to overcome the stiffness and to compensate for the wear in the links, though there is space enough on the brackets to raise the idler pulleys. On some cards the flats are rubbing on the plates so badly that no amount of added tension would overcome the fact that the chains are so badly worn there is no relation between the pitch of the sprocket and the pitch of the chain. A condition such as this naturally causes the flat to go partly around the sprocket riding on the point of the teeth. When the flats go over the plate, the clearance is not sufficient for it to pass without rubbing the plate and depressing the plate into the cylinder wire; consequently, the wire on the flats is loose and faced; this faces the cylinder wire and has a tendency to loosen the cylinder fillet. This trouble may be partly overcome by dropping the plates and pulling them closer to the cylinder, which at best is only a makeshift arrangement that is of doubtful results and success. Due to the difficulty of the job, the labor will cost as much as half the price of the new chains. Approximately 75 per cent of the cylinder and doffer wire needs to be re-drawn and in several places the fillet is so badly broken out that it is doubtful whether these fillets would stand re-drawing. Progress is being made in re-drawing at present and at the same time the shoulder on the milled ends of the flats are being filed, the plates taken off and polished, re-straightened and re-set. While this is being done, the chains are soaked in oil and flats that should be taken out are removed."

To quote from a survey of another mill:

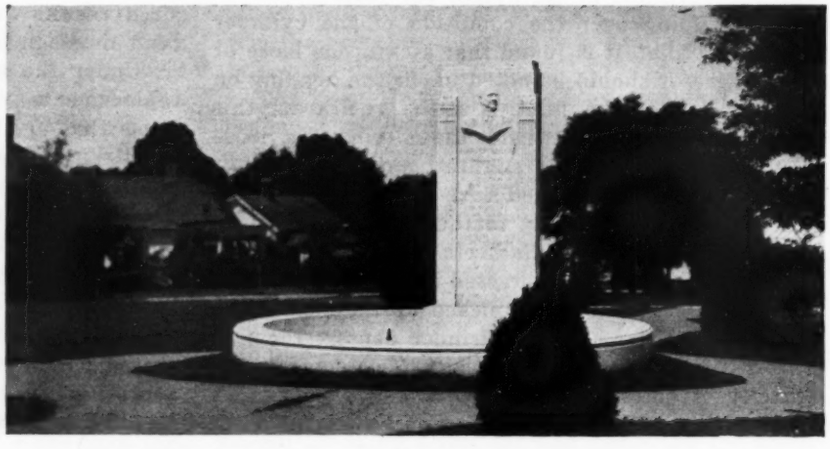
"The cards are 1908 and 1911 model and are in fairly good mechanical condition, however, there is room for improvement in the condition of the wire on the flats, cylinders and doffers. The cylinders in particular are in bad shape due to the excessive amount of jammed wire. There is hardly a cylinder but that has from 10 per cent to 25 per cent of the wire jammed. It is hardly possible that a condition such as this could be caused by foreign particles in the cotton as the cotton is hoisted by air about 12 feet in a vertical trunk. Taken as a whole, the flats are in good condition as to wire; the milled ends of the flats show little wear so that the shoulders are hardly noticeable. The links and thimbles are worn to the extent that the chains are very slack and are causing a number of flats to ride off the bend, thereby losing carding possibilities. In some instances the idler pulleys are as high as they will go, but in some places it is possible to raise these pulleys and to take up some of the slack. It is possible that the carding could be improved by adopting a program of taking two flats out of every chain, filing the shoulders while the flats are on the card and grinding the flats afterwards with a new or re-conditioned cradle for a sufficient length of time to make them fairly uniform. However, it is doubtful whether any marked improvement will be seen in the carding until the flats have been ground on a flat grinding machine that will reduce the variation in the length of the wire from flat to flat from 15/1000 that has been found on these cards. * * *"

Practically every process in cotton manufacturing has undergone some decided changes in design, method or speed, except the card, which today is similiar to what it has been since the days of stationary flats. Some changes have been made in the comb boxes, composition of the metal comprising the card, refinements in parts and surfaces, etc. For this lack of change there is no basis of comparison as to what old equipment can do against new equipment that is radically different in design and operation; therefore, there is little that can be done toward modernization of cards in the generally accepted term. However, it is a machine that can be returned to almost perfect condition and performance by spending for new clothing and parts approximately one-fifth of the cost of a new card.

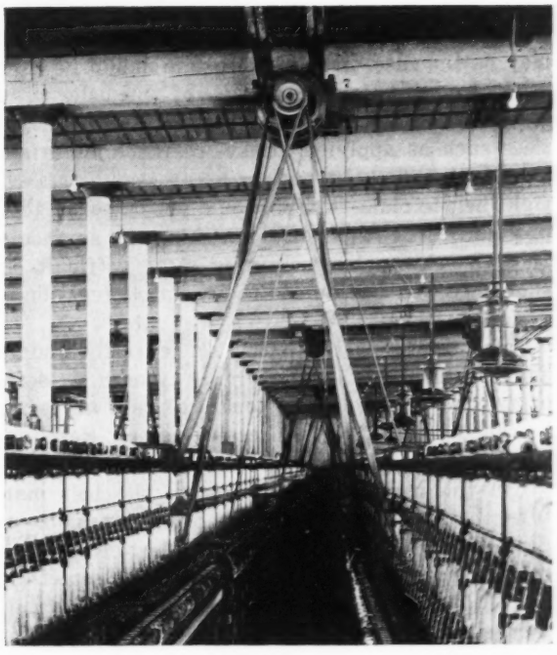
(This discussion of making surveys will be continued in an early number.—THE EDITOR.)

Memorial to the late Harvey Enloe at Roanoke, Ala.

A BEAUTIFUL memorial was recently erected in the village of The W. A. Handley Manufacturing Co., Roanoke, Ala., by the Head Marble Works, Roanoke, for the employees of the mill, to the memory of the late Harvey Enloe, general superintendent of the mill for 35 years, who passed away in 1935. The inscription reads: "HARVEY ENLOE—1868-1935. By the generous contribution of their time, this memorial was made possible by fellow-workers of Mr. Enloe, as a tribute to his high moral character, loyalty to his friends, and charity to all."



How to Make YOUR BELTS Earn Their Own Living



REGARDLESS of whether you own the factory or are the operator of just one machine, you are vitally concerned with the problem of obtaining maximum output from the manufacturing machines in your establishment. It costs actual money, either directly or indirectly, to both employer and employee alike, if a machine fails to deliver 100 per cent of the quantity and quality of the material which it was designed to produce. With competition between manufacturers becoming keener and keener as time goes by, it is logical to assume that both employer and employee desire to learn the facts and follow the procedures that will enable them to increase production from their present standard to one more closely approximating the desired 100 per cent figure.

During the past years there has been a tendency for industry to discard the belt as a medium for transmitting power, resorting instead to the application of unit electric drive in an effort to obtain the ultimate in production from manufacturing machines. In many instances this has been done because of a lack of understanding of the production possibilities inherent with properly applied belt drives; also, because many manufacturing establishments have failed to set up intelligent procedures for adequate and correct belt maintenance. The purpose of this article is to give unbiased information concerning the proper use and maintenance of belting in order that there may be obtained the constant speed on production machines so essential to consistent maximum output. By following the suggestions given it may be possible to obtain increased production with lower power costs, along with commendable improvement in plant earnings.

If trouble is experienced with a belt drive, or if it is felt that production is not being maintained at its highest possible standard, there are three things that may be done—any one of which may supply the solution to your problem. These are: check your drive design to see that it is of a type to transmit the necessary power in the most effective manner; be sure to purchase quality transmission materials; and, investigate your maintenance practice to determine if it is adequate and correct.

Reputable belt manufacturers, both leather and rubber, are doing their utmost to design and manufacture belting that will transmit power most efficiently and economically. When you purchase this product you expect satisfactory service over a long period of time, and so naturally you select that type which in your judgment is the most economical for your purposes. Your money has bought a certain number of feet of belting, but in the truest sense you have bought a medium for the efficient and economic transmission of power to your production machines. Having made the purchase, you rightfully expect that the machines will operate at designed speed without variation or interruption.

Causes of Speed Changes

Under certain conditions prime movers—whether steam or electrical—may vary in speed, and change in machine speed will result therefrom. Beyond this point, additional changes (or losses) in machine speed usually are traceable to a slipping belt. Why is it that after long and satisfactory service a belt either suddenly or gradually fails to revolve the driven pulley at the desired speed? This is a vital question which deserves emphasis and consideration.

To eliminate belt slip, it is well to understand why a belt does not slip, as well as the change which causes slippage to develop. Assuming that the drive design is correct and that the proper transmission equipment has been applied, efficient operation depends upon only two factors: *tension* and *coefficient of friction.*

The first factor is understood by everyone. Any mechanic or machine operator knows that if a belt stretches with resultant lost tension and lowered pressure between the belt and the pulley—it must be shortened, either manually or automatically. On the other

An abstract of a paper presented before a recent meeting of the Atlanta Power Transmission Club by a committee composed of Messrs. D. A. Ahlstrand, Ingram Dickinson, Fred V. Bailey, and C. R. Mitchell.

hand, belts may be put on too tight, thereby increasing bearing pressure and wear on the belt. Whichever may be the case, improper tension should be corrected solely by adjusting the length of the belt, but never by using foreign substances on the belt or pulley. Practices such as applying sticky, resinous materials to a loose belt to make it pull, or using soap or starch on a tight belt to make it slip, should not be permitted. This procedure will result only in caking the surface of the belt, thereby making cleaning more difficult, and in shortened belt life due to the chemical reaction on the fibers of the belt.

The second factor is not so generally understood, and the term is therefore much abused. "Coefficient of friction" sounds very technical, and hereafter will be called by its more expressive name, "Resistance-to-slip."

In the manufacturing process the belt manufacturer builds into his belt the highest possible resistance-to-slip. If properly applied, the new belt operates satisfactorily at normal tension until something affects the pulling surface, thus lowering the ability of the belt to transmit power. So generally that it may be considered a rule, the thing that happens is that foreign matter gathers on the belt, causing it to slip. The correct and best procedure is to clean the belt first, for often this will immediately remedy the trouble.

Recommended Methods of Cleaning Both Leather and Rubber Belts

The method of cleaning will vary with different industries. Lint in textile plants is best removed by the simple, quick, and inexpensive practice of applying a section about 5 inches long of old automobile tire casing to the pulley surface of the belt. Only a few seconds per belt is needed, daily application of the cleaner being advisable. Where lint is more prevalent, two to four times per day will be found profitable. In cottonseed oil mills, meal may adhere more firmly to the belt, necessitating its removal with a metal scraper. Above all, the important thing is to *keep the belt and pulley clean.*

For rubber belts, the manufacturers recommend no dressing. Obviously, there is no method for applying a dressing that will become a permanent part of the rubber belt. In fact, repeated applications of dressing on rubber belting tend to destroy the original surface friction. In addition to setting up a vicious cycle of frequent dressing requirements, this practice tends to set up a deterioration of the belt itself. Therefore, the use of dressing on rubber belting must be considered a strictly emergency measure, remembering that cleaning the pulley surface of the belt will undoubtedly be easier and better.

Manufacturers of rubber belting generally recommend cleaning the belt with high-grade naptha or carbon tetrachloride to remove all foreign matter. Then a light application of castor oil is made by wiping the belt with a piece of waste which has been moistened with the oil.

Leather belting owes its ability to transmit power to a combination of leather fiber and natural animal greases known to the leather trade as currying greases. It is necessary first to keep a leather belt clean, as outlined above, and second to keep the belt in the proper condition by the correct use of leather belt dressing. The one and only purpose of this dressing is to replace such currying greases as may have been removed by evaporation or absorption. Careful selection of belt dressing is most important if the best resistance to slip is to be assured, and if maximum belt life is to be obtained through complete lubrication of the leather fiber.

There now arises the obvious question of how to select the correct belt dressing. Your source of belting supply assumes the responsibility for the efficient, economical transmission of power to your machines. It is quite logical that you should consult your belt supplier to make sure that the dressing you buy will assist the belt in its work and in no way will interfere with its performance. However, as a general rule, dressings containing sticky, resinous ingredients are to be avoided, keeping in mind that adhesion of the belt to the pulley must necessarily follow proper lubrication and consequent restoration of the resistance-to-slip. Such restoration can be obtained in no other manner without permanent injury to the belt.

Applying Belt Dressing

The amount of dressing, and the method of application, require careful consideration. Except under unusual conditions, new leather belting will contain about 10 per cent of currying greases. It is apparent, therefore, that if a belt weighing 100 pounds were to lose all its grease, only 10 pounds should be added. For best practice, greases should be added as they are lost, except when the belts are used in extremely dry atmospheres. Since belts rarely lose more than one to two per cent of grease per year, dressing should be applied in very small quantities and only as frequently as the condition warrants. There is little danger of the amount being too small. The real danger is in the amount being too large, as evidenced by the refusal of the belt to absorb the dressing. Under this condition, the dressing remains on the surface in excess quantity, and results in more harm than good. At no time should dressing be applied at a temperature under 75 F.

In conclusion, it is necessary to follow only a few simple rules to obtain full value and proper service from transmission belts. Give careful consideration to the selection and design of drive, and the same consideration to the quality and type of belting. Establish intelligent belt maintenance; this means keeping your belts operating at the proper tension and keeping the pulley side of the belts clean. Use dressing in accordance with recommendations of the belt manufacturer. Correct maintenance is not nearly as difficult as it may appear, and it will evidence its value through longer belt life, lower power consumption, maximum machine speed with full production, elimination of machine stops, and all other benefits of efficient, dependable machine operation. These benefits will accrue to the employer in the form of increased earnings and enhanced profits, and to the employee whose salary is dependent upon machine output it will mean a higher income by virtue of the increased production of the machines which he tends.

WARP SIZING, by Paul Seydel (Article 10)

Analysis of sizing compounds, and practical mill tests, are covered in this, the tenth installment of the author's discussion . . . . . .

THIS is the tenth installment in the series by Mr. Seydel. Here he discusses a vital subject—that of analysis of the ingredients of the size mix—and also gives some practical, worthwhile suggestions for tests—as distinguished from "analysis"—which the mill can and should make regularly.

Analysis

IF genius is an infinite capacity for taking pains, no one has this quality more developed than a good analytical chemist. Of course a good one is as scarce as a real genius. When a chemist solves the problem of identifying the different ingredients of a complex mixture of organic compounds, he has performed a task worthy of much greater praise and reward than he generally gets.

I once was asked to duplicate a sizing mixture exactly. I would have hesitated to do so if it were not that for excellent reasons I knew the exact composition of it, being the inventor of its formula. I first checked it up and my checking showed it had not changed since the day I was familiar with its manufacture. I then duplicated the formula and methods of mixing, reactions, temperature control, all details of which I had carefully kept notes so that the sample and my duplicate looked very much alike. In order to convince the client that the duplicate was perfect, I took a quantity of both to an experienced analyst, in whom I had great confidence, and told him I wanted a report showing the differences, if any. The analyst asked me many questions, which a man with less knowledge and reputation would have had too much false pride to ask. To simplify his work, I told him exactly what to look for and simply to determine proportions. After a week he called me up and told me that in spite of diligent efforts he could not identify all the ingredients I had told him to look for. I conferred with him, checked up on his results, made a few suggestions and he went back to work. At the end of another week he offered me his report, which read substantially as follows:

"The two samples submitted have been analyzed and without guaranteeing the accuracy of findings the proportions of the following ingredients have been found . . . I am inclined to believe that the composition of the two samples is identical."

Next time I saw him I told him to send me a bill. He said, "Seydel, the time I spent on this is more than I care to charge you for. I enjoyed the work and you taught me a thing or two but do not give me another job like it unless you are prepared to pay one or two hundred dollars for it."

And this was in spite of the fact that I told him what to look for and how to do it and just to determine the proportions. What would he have said had he been compelled to grope in the dark? If the average analyst tried before turning in the result of his analysis, to make a sample of the goods according to his findings, he would find out how far off he is in nine cases out of ten, especially if he tried to obtain identical results with it, by actually using his material in a practical test.

I might be able to explain why some so-called chemists find materials that are not present and do not find the ingredients that are actually there but this would involve me in too scientific a discussion for the object of this series.

Why "Analyses" Are Misleading

The purpose of my comments is simply to state that we must not accept the claims of an analyst who declares that he can identify accurately the component parts of a complex mixture of organic compounds at all, and even one who claims to be able to make an approximate guess without going to so much trouble that the charges for his work would be prohibitive. We may readily determine the elements but quite often will fail when reporting the combination of these elements. To make this clear, let us cite an example. An analyst may report a compound to contain glycerin. The glycerin may have been in combination as it is in tallow or it may have been free, and this makes all the difference in the world as to its properties and value as a sizing ingredient. In this particular case, the glyceride called tallow is merely a softener or lubricant, insoluble in water, whereas glycerin is a deliquescent highly soluble in water and is no lubricant.

The chemist divides materials in three groups, (1) elements, (2) compounds, (3) mixtures. Elements are readily identified. The second class is very numerous, but its units are perfectly definite in composition. The third is of course extremely numerous. There is no fixity in its members which often makes it extremely difficult if not impossible to identify their nature. Sizings are often very complex mixtures and from their nature very hard if not impossible to accurately analyze, even approximately. It is next to impossible to determine accurately the proportions of a mixture of fats and of gums if it is composed of fats that are very similar chemically.

The first article in this series, page 43, November, 1935, COTTON, gave a non-technical analysis of the composition of raw cotton; the second, page 44, December, 1935, issue, covered flours and starches; the third, page 55, January, 1936, issue, covered gums and glues; the fourth, page 63, March, 1936, issue, covered fats, lubricants and softeners; the fifth, page 74, April, 1936, issue, covered deliquescents and preservatives; the sixth, covering weighting materials, appeared on page 68, May, 1936; the seventh, page 60, June, 1936, covered water; the eighth, page 59, July, 1936, covered the ingredients necessary to make a well-sized warp; and the ninth, page 51, July, 1936, discussed defects in the warp, and their detection. Reprints of these previous articles are available to those who do not have copies, upon request.—THE EDITORS.

There are dozens of gums all derived from starch which are equally as hard to identify. Once cooked or chemically treated it is next to impossible to differentiate between potato starch, tapioca starch, corn starch and the gums produced with them, especially if they are mixtures of different starches and gums.

The analysis of a sizing compound is valuable to check up whether successive shipments are similar as to proportions of such ingredients as total fats, total moisture, etc., but are a very poor indication of the money value or the efficiency of the compound.

It is remarkable how old customs and prejudices will live. The first sizing compounds were made of flour and tallow.

Most users of warp sizing have become educated to the fact that those ingredients are not perfect, but a few still believe that the percentage of tallow is an index of the value of a warp sizing, and it is still a curious habit with some users to judge the quality of a compound by its tallow or fats content, regardless of the sizing value of this fat.

As a matter of fact, raw cotton would contain enough fat if the fats it contains were ideal lubricants or softeners, but their melting point is too high and they do not possess the proper viscosity and oiliness. Therefore, the fats contained in sizing should be selected to correct these defects, and a little of the right kind is much better than a lot of the wrong kind.

If too much fat is used and especially if too much tallow is used, the same result is obtained as when too much tallow is used in shortening biscuits—the size crumbles into flakes when it dries and of course sheds and does not produce any strength. What is needed is a continuous film to coat and protect the yarn. This film must be strong and elastic. Starch will not do this satisfactorily alone. Therefore, the sizing compound must contain chemicals to transform the starch into a more elastic gum, and to produce a smoother and more continuous film. A good, complete warp sizing will contain over a dozen different ingredients, and if the buyer insists on too high a fat content there will be no room for other valuable ingredients and the size will not be well balanced.

The Matter of Size Analysis

Even though a chemist were able after long work to identify the different substances in a compound it would take someone who had actual practical experience with its use to judge the value of the substances present. By no means does it follow that the value of a compound as a whole is determined by the total cost of its several ingredients. Often some of the more efficient substances and most valuable as far as results go, are the cheapest. Only through long years of experience, comparing different products in actual mill use, can the size manufacturer determine which product is most efficient.

An analyst is as likely to be able to say from an analysis that a sizing compound will do a certain thing as he will be able to say whether a dead man was good or not after determining the proportions of hydrogen, carbon and oxygen his body is composed of. The application of a sizing compound is the only way to prove its value.

The actual value of a sizing compound can only be determined by practical demonstration in the mill and the sizing manufacturer being mainly a consulting chemist to whom problems are brought, it is up to him to solve them to the best advantage of his client. He furnishes the material only as a part of his service. The most important service is that of a very thoroughly specialized education and an intelligent application of this specialized knowledge. The mill, for this reason, finds it to its advantage to deal only with concerns who are known to be thoroughly reliable and have scientific equipment and personnel fitted for this very special work.

Chemistry is a highly specialized science and has more subdivisions than any other science. The fact that a man is a graduate chemist does not qualify him any more to pass judgment on a warp sizing problem than the average dentist is qualified to operate on a patient for appendicitis or any other major operation outside of his specialty.

Some Practical Mill Tests

There are some tests that can be made in cotton mills without the services of very competent chemists. The moisture test should be made especially of the warp as it comes off the slasher. For this purpose right after the loom beam is filled, before starting the next beam, from 18 to 24 inches of warp are cut all the way across. This is put immediately in an empty, air tight jar, which has been allowed to remain open in the room before it is used long enough so as to have its normal temperature and moisture. A glass fruit jar is an excellent receptacle. This is sealed immediately after the sample is put in and sent to the testing room. Electric ovens, very simple of operation, can be used for the purpose of determining the moisture. The sample after being weighed on a precision scale is dried at 220 degrees F. until three successive weighings at 30 minutes interval show no more decrease in weight.

The ideal moisture content of a warp for good sizing is 8 per cent and this should be as it comes off the slasher, not a regained moisture, because if the size has been dried so as to contain much less than 8 per cent it will have lost elasticity which regained moisture cannot return to it, the elasticity that overbaking has caused it to lose is lost permanently.

It is far better to dry a warp with one pound pressure on the slasher drum than with 5 and infinitely better than as is sometimes done with 10 pounds or more. Of course the amount of pressure needed depends on the capacity of the slashing installation and the speed required to dry the warp needed for the mill's operation. When visiting most slasher rooms, we find that great carelessness exists in the proper treatment of the warp. If the average warp dresser realized how much a warp is injured by drying at high temperature, he would insist that sufficient slashers be installed to permit him to dry his warp without more than 1 or 2 pounds of pressure on the slasher drum or a temperature as

near 215 degrees F. as possible, because every pound, in fact every degree, above this temperature works havoc with the starch on the warp. A baked warp is brittle, ties and weaves poorly and gives inferior cloth.

When the warp is dried in chambers, as is sometimes done, the temperature must be carefully regulated. I cannot think of a better investment for a mill, be it for cotton or any other fiber, than sufficient and proper slashing equipment to make it possible to dry the warp at the lowest possible temperature. In no case over 5 pounds of pressure should be used if real good weaving is expected.

Some warp dressers think that by weighing a set before and after sizing they get the percentage increase in weight representing the additional size. This would be correct if the amount of moisture before and after sizing were the same but in numerous samples of warp we have analyzed, we have found anywhere from 2 per cent to 14 per cent of moisture. Suppose a warp contained 8 per cent of moisture before sizing and 2 per cent after sizing, it may show a regain of only 4 per cent and yet actually have 10 per cent of dry added size, the analysis before sizing showing:

Cellulose	90%
Water	8%
Ash and Fats	2%

and after sizing:

Cellulose	86%
Water	2%
Starch, sizing, etc.	12%

This warp has been dried far too much and with the proper amount of moisture should analyze:

Cellulose	81%
Water	8%
Starch, sizing, etc.	11%

This would then show about a 10 per cent regain. On the other hand, a warp fairly dry before sizing might show scarcely:

4% Moisture, 94% Cellulose, and 2% Fats and Ash

and after sizing:

14% Moisture, 10% Sizing, etc., and 76% Cellulose

If satisfied with weighing, the above warp before and after sizing the warp dresser may think that he has increased the weight of his warp 20 per cent which appears to be so but in reality he has only added no more than 10 per cent of dry sizing ingredients to his warp.

The foregoing emphasizes the advisability of making moisture tests before and after sizing at regular intervals. These tests are simple and require no considerable technical skill.

After testing the warp for moisture, it may be tested for total size as follows:

Determining the Moisture Content

Moisture: Weigh to 1 or 2 milligrams a 10-gram sample of raw yarn, sized yarn or cloth. Weigh as rapidly as possible to prevent the sample taking up moisture from the atmosphere. Heat in oven for 3 or 4 hours at 105 degrees C. Weigh in tared, air-tight containers, as yarn picks up moisture rapidly. Loss represents moisture.

Size: For this analysis, the sample should be weighed at the same time as the sample for moisture, or even better, the sample used to determine moisture may be used, to insure correct moisture for calculations.

Put sample in 400 cc beakers or 600 cc widemouth Erlenmeyer flasks. Cover with soap solution to wet the yarn. As soon as yarn is sufficiently wet out, decant, and rinse sample well.

Add 100 cc of one degree Baume HCl, and fill container with water. Total volume 400 to 450 cc. Bring to boil, and boil for forty-five minutes, keeping filled with water to prevent acid becoming too strong. Decant, rinse well.

Add 100 cc of one degree Baume HCl, and fill container with water. Total volume 400 to 450 cc. Bring to boil, and boil for forty-five minutes, keeping filled with water to prevent acid becoming too strong. Decant, rinse well. Use one-half strength for raw yarn.

Repeat with 100 cc of one degree Baume NaOH. Use one-half strength for raw yarn.

Boil sample in water, rinse well again, then put in oven for 3 or 4 hours at 105 degrees C. Loss is moisture, size, etc. (Item "etc." is natural waxes, natural mineral matter, and dirt).

Calculations: Report only moisture on raw yarn. Report moisture, size and cellulose (by difference) on sized yarn and cloth samples.

Raw Yarn: Moisture is loss multiplied by 100, plus weight of sample. Item "etc." is loss multiplied by 100, plus weight of sample, minus moisture.

Sized Yarn and Cloth: Moisture same as raw yarn. "Total" is item "etc." plus size (figured same as item "etc." for raw yarn). "Size" is correct item "etc." found in raw yarn to per cent cellulose, then subtract from total.

The estimation of fats, including waxes, oils, glycerides and hydrocarbons, is a highly technical procedure and when present, it takes an expert of unusual skill to determine even approximately the nature of a mixture of several fats and waxes.

In general, it is best, unless a mill is large enough to employ a trained, experienced chemist and maintain a well equipped laboratory, to have analyses made by a chemist experienced in that particular line of chemistry. We strongly suggest where this is done, checks on the same sample be made by asking one or more of the firms supplying the mill with starch or compound to analyze same, reporting only those groups that can be determined with reasonable accuracy. More harm than good usually comes from an analysis that is not accurate in its findings. Many curious phenomena occur in chemistry. New discoveries are being made daily to still further complicate the matter. Only through practical tests of scientific theory can one be sure. I have seen three samples of pure platinum, all analyzing chemically the same, have three widely different actions in the manufacture of sulphuric acid, simply because their physical states were different. This is true of any number of substances. Also, many substances acting alone have one set of properties, while in the presence of other substances have an entirely different set, and react quite differently.

CURRENT TEXTILE TOPICS ....

Talk of the Month

HEALTHY fall business in finished cotton goods has long been casting its shadow before and the mill industry has profited therefrom. The statistical story throughout the summer was the best of many years. It was the tale of broadening consumer demand based upon general economic recovery from depression. The cotton industry, freed of political obstructions which set it apart from other business, in a disastrous way, was enabled to partake of the wholesome fare and assume a ruddy complexion in place of depression pallor.

Consumer demand rules the day after long years of waiting

Figures on consumption of raw cotton during July, published by the government in mid-August, are something to conjure with. They reflect an extraordinary transformation of the cotton industry from spring to summer. For fourteen months, previous to August, the consumption of cotton month by month was consecutively above that the year before. But it remained for July, with a jump of nearly 50,000 bales over June, to reach the best total for more than three years, on extensive forward purchasing in contrast with previous close buying of goods.

In May of 1933 consumption was 620,561 bales and in June of that year it was 697,261 bales, the peak of the recovery. The flurry of that false start to the recovery, however, which was intensified by the demand for goods to get ahead of conditions under the NRA which became effective at mid-summer, was followed by a decline by the end of the year to a consumption in December of 347,524 bales, the low of the past three years.

Since that time the cotton industry has waited long for relief from hampering conditions peculiar to itself. Even the elimination of the AAA on January 6 of this year had its aftermath of disaster: through the fear of new legislation which caused buying through the late winter and the spring to drag on a hand-to-mouth basis. Thus even into May there was a weak market, with prices dropping well below cost of production and widespread belief created that curtailment of production through the summer was essential.

Consumer buying, meantime, was moving along in a broad way and demonstrating the need of full production rather than curtailment. Mills found that, though buyers were purchasing cautiously through the spring, the volume of consumption was large and the accumulation of goods was exaggerated. The result was that, by mid-summer, leading manufacturers were recognizing the fallacy of building volume at the expense of profits. As stated by Fred M. Allen, head of the Southern Combed Yarn Spinners' Association, accepting business at less than cost or even at the theoretical break-even prices injures not only the individual mill but the industry at large.

By the middle of August, it was clearly indicated that heavy consumption of all kinds of goods over retail counters was under way. The July record of business was exceptional and August kept it up, contrary to the seasonal trend. Toward the last of August all that had been seen of the expected mid-summer decline was minor dips in such lines as automobile and steel manufacture. The former was preliminary to the introduction of new models and retail sales of autos continued unusual. And steel promised a new fall peak.

Meantime unbounded confidence was being exhibited in the fall business for retailers. Wholesale markets were besieged for days and weeks with buyers in record numbers. Covering of fall requirements was large in dry goods and all sorts of consumer merchandise. This was assurance for the distribution of the volume of goods taken by converters in the primary markets of production and, as stated by mill men, the large sales of finished merchandise was argument for further business in gray goods.

Not only the figures of July consumption but the attitude of sellers in August bore testimony to the most favorable conditions in the cotton industry for many years. A sharp decline in raw cotton from July 10 to August 10 failed to have appreciable effect upon prices of goods. This was because demand for goods rather than supply of cotton was dominant. W. D. Anderson, of the Bibb Manufacturing Company, made the sententious remark that he was "more bullish on the price of goods than on the price of cotton."

Incidentally July consumption, except for two months in 1933, was the best since October of 1929. For July it was the peak by comparison with all years back to 1928. The extent of goods demand on top of this, was indicated by premiums for some spot lots because of scarcity, even in August, when forward buying was checked as buyers waited for possible advantage from the decline in cotton due to the better prospects of the crop in July.

Such a situation was so significant of a sound position for sellers that a lull in forward buying was received complacently by manufacturers. It might have been welcomed also as an automatic safeguard against rash speculation. In a rising market buyers are apt to purchase beyond indicated requirements for the purpose of securing favorable prices. It is pertinent to the cotton goods situation that wool manufacturers, looking toward spring business, have recently moved to enforce sound practices among buyers in regard to contracts. The wool industry has suffered frequently when buyers have speculated unduly then sought outright cancellations of some orders or vitiated contracts by failing to specify deliveries, or other shifty methods.

Perhaps the predominant factor for confidence in the months ahead is the advance of the durable-goods industries. The broad rise of building and other lines which lagged so long after the consumer-goods indus-

tries made a good start toward recovery has given a balanced forward movement which augurs well for the long-range trend. Those industries are a direct source of business to cotton manufacturers and have a direct influence through their bearing on employment and general purchasing power.

New England Mill Situation

COTTON MILLS of the New England district came into the fall with substantial orders for production, substantial after a notable summer business, especially by comparison with the record for many years. The market followed the course of national business in cotton goods, with some lull after the broad movement in June and July, yet a healthy trend to demand noticeable in August. Buying was reported moderate, but consistently good.

This district long ago lost its position as a center for production of coarse goods and became outstandingly a market for fine cloths. Some surprise was occasioned, therefore, by evidence of a demand at midsummer for printcloths in the once outstanding market for such goods, viz., Fall River. This may be accepted as a sign of the unusual pick-up in the cotton industry at large, for no sustained call for coarse goods from New England is believed likely.

From many angles, the recent weeks have brought a change in conditions long without parallel in New England. Liquidations of machinery over 12 to 15 years have at long last created a new community spirit toward the industry. This and the most healthful market for cotton goods generally for years, together with actually better conditions for operations created by the new public attitude toward mills, have given a new aspect to the business.

Over the years the cotton industry in Massachusetts has lost something like one-half the spindleage which at one time made it the leading cotton manufacturing state of the union. It remains a large segment of the national industry, nevertheless, and the legislature has come to a realization that the remainder is well worth salvaging, along with protection for the other manufacturing that exists in the state.

Ten leading industries with machinery holdings valued at approximately $250,000,000 are among the groups that stand to be relieved of a burden of around $5,500,000 annually in taxes, by virtue of the substitution of a state levy of $5 per $1,000 valuation, against an average more than six times that amount through local taxes as heretofore. The largest gross machinery valuation is $74,821,700 in the cotton goods industry. Another textile branch, woolen and worsted, comes second with a valuation of $23,011,150.

Reports of mill production and returns of several companies in Massachusetts are significant of a new position for the cotton industry here. The government statistics of machinery activity for June reflected the best average per spindle in place for Massachusetts in more than thirteen years. The average was 185 hours, a figure without comparison since May of 1923, when the rate for a larger number of spindles was 188. While the volume is reduced, the important thing now is profitable operation of the machinery held. .

Late in July the Sagamore Manufacturing Company of Fall River declared a quarterly dividend of $1, payable August 4, against 50 cents previously. The Pepperell Manufacturing Company shortly after also doubled its annual dividend rate from $3 to $6, while about the same time the Bourne Mills of Fall River increased its quarterly rate from $1 to $1.50. Of course the Pepperell manufactures in the South as well as New England.

Among the changes in operation has been a decision of the Pacific Mills to run a third shift on wool upholstery fabrics which involves an interesting episode in Massachusetts textile regulation. The Pacific lost a large contract with the Ford Motor Company because the advisory board of the state department of labor and industries opposed more than two shifts in textile plants. However, consent finally was given the Pacific in a field where quick delivery rather than pressure on manufacturing costs is the chief consideration and the mills will seek new orders.

Recent reference was made to the progressive activity of the Wamsutta Mills of New Bedford and it now transpires that the company is having its best year since 1927. Other New Bedford mills are doing well and still more have favorable prospects. The generally improved position has brought a tendency upward in prices of mill stocks, which have been largely neglected by investors for a long time.

Several years ago outside interests sought to acquire the Nonquitt Mill of New Bedford for liquidation purposes. The management fought the proposition and prevailed upon the owners to convert the mill from a yarn spinning to a weaving unit. The results have been a vindication of the plan and the directors recently declared a dividend of $1 a share.

In New Hampshire, liquidation of the Amoskeag Manufacturing Company having been the verdict after months of agitation and litigation, the sale of the plant will be held in the fall. The best thing about the unfortunate break-up of this huge plant is that it comes when times show improvement.

J. W. Farley has been made chairman of the board of the Nashua Manufacturing Company, of Nashua, N. H., to succeed the late Walter C. Baylies, who held the position for many years. Robert Amory, president, reported the mills at Nashua and at Cordova, Ala., running full on two shifts, with a good backlog of orders in the middle of the summer. He noted that many economies had been put into effect and that the costs were low enough to meet severe competitive conditions.

Power Loom

A patent on the power loom was granted in 1785 to Edmund Cartwright, 42, English country clergyman. The loom produced the machine age and chronic labor troubles. Manchester textile manufacturers, recognizing the worth of Cartwright's invention, immediately installed it and discharged hand weavers. Workers rose in the night, burned the factories and attempted to prevent manufacture of any more of the clergyman's machines.

Patent laws were loosely drawn and Cartwright collected few royalties. He himself was a failure as a textile manufacturer.—Ex.

"THE SITUATION"—as Seen Across an Executive's Desk

August 18, 1936

I have been out with my telescope almost every night during the last month trying to find that new comet everyone is talking about. Just about the time I thought I had met with success I read in the paper that the dern thing had lost its tail. Now, how can an amateur know a comet without its tail? It's the same way with the textile game. Each time I think that I have everything lined up for some future business with profits and little trouble ahead something happens. I only wish I could look around and find some new higher prices for our goods. Everything that has happened this past month has told us that prices should be raised, but so far they haven't been raised high enough to cover our costs.

Looking Back on Blue Ridge

Before I got so busy looking for that comet I went up to Blue Ridge, N. C., looking for something just as hard to find—a solution to social security problems which will be part of our textile lives after January 1, and which we are all trying to get adjusted to now. I had expected to hear Mr. Winant speak in behalf of the social securities administration at the Conference on Human Relations in Industry but due to his wife's illness he was unable to appear and he sent his proxy, W. R. Williamson, formerly of Travelers' Insurance Company, Hartford, Conn. Mr. Williamson is by training an actuary and his final summation of the social securities problem with its old age pensions and unemployment insurance was that the consumer of manufactured goods would pay the bill.

All textile plants by having to install new bookkeeping systems in order to administrate the systems necessary for the proper tabulation of percentages deducted from pay-envelopes, payments to be turned over to the Government, payments made by the employer into the pension fund; by having to employ additional office help needed for the upkeep of such a system; by having to pay employer taxes toward the security funds and by having to bear other costs which will be found necessary in the administration of this law will have to raise their prices by an amount relatively necessary to cover the costs of all these things. By raising their prices to cover this particular legislative plum the buyers of textile products will be paying the bill rendered on social security.

Since it has long been conceded that the vast consumer market for textiles is made up of the working class then the working class will pay the accrued expenses of the Social Securities Act. This act was passed to protect the industrial laborer. It will protect them by taking extra pennies out of their pockets a little at a time and then repaying in a lump sum at the end of a certain number of years all those pennies which have come out of their pockets day by day. It's just a complicated way of making them save up for a rainy day. Well, that is something we will be looking after for a long time to come, but just now we must remember that we must take this social security problem as a serious cost factor when figuring the prices on our goods for future delivery, or else *we* will be paying the bill instead of the consumer who will ultimately benefit from it.

Why Not Better Prices?

There are lots of things we always have with us —Death and Taxes of course are two, governmental legislation affecting our business and prices too low for profit seem in these days to be as inevitable as the first age-old items, and that makes four. We can't do much about the first three plagues except take them as they come but "why in the name of common sense we can't do more about prices" is the big question I ask myself every day. True—some prices have been raised this summer, but only enough to keep pace with the jump in the cotton market and no consideration has been taken of the further increased costs that we will have at the close of this year.

The Cotton-Textile Institute, the latter part of July, sent out a warning to its carded yarn group about that very thing; although the volume of carded yarn business this year has been exceptionally heavy and sales have exceeded production, carded yarn manufacturers had failed to place their plants on a profitable level. Said the Institute:

"Present margins for carded yarn are not sufficiently higher than last year to lead to any encouragement that losses have been overcome. In fact, in important counts like 30s/2 ply ball warps and 20s/2 ply ball warps, the present manufacturing margin, i.e., the difference between the selling price and the higher cost of cottons, as compared with the margin of last year, shows practically no change whatever. This indicates that while buyers are paying prices high enough to compensate the mills for the increased cost of cotton over last year their purchases are not making any contribution toward avoidance of further losses. If mills are not going to repeat the experience of the first half of 1935, when they served their customers at a loss to themselves, they will have to receive prices that more than make allowance for the increase in the cost of raw cotton."

Although this letter was primarily for the carded yarn group it is applicable to each group in the entire industry. The same warning should be heeded by all—combed yarn, print cloth, sheeting, thread manufacturers as well as spinners of carded yarn!

Mill Activity Higher

This summer's mill activity has been higher than at any period since June-July, 1933. Stocks of all kinds are low and while buying has been steady it has been restricted to almost immediate needs. Now it seems that there is a huge potential market on the horizon with real business for all. The New York Cotton Exchange Service estimates consumption of cotton during July of this year by domestic mills 581,000 bales against 557,000 in June and 391,000 in July, 1935. The daily rate in July consumption was 25,300 as against 17,800 of July, 1935. This is a good barometer of the sustained activity and while

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The difference between the Goodyear COMPASS Belt and all others is its patented endless cord carcass. It has no splice—the weak link in other belts! The load is carried by a layer of endless rope-cords, spiralled continuously — an exclusive Goodyear construction that is practically stretchless. Goodyear COMPASS Belts are 25% thinner than other belts of equal horsepower capacity—insuring far less internal friction, longer flex-life and ever-tight, speed-holding grip on the pulleys. That is why they give such exceptional performance on Pickers, Twisters, Vertical Openers, Eveners and other belt-killing textile drives. Let the G. T. M.—Goodyear Technical Man—tell you how economically you can fit your drives with this money-saving belt. To bring him, write Goodyear, Akron, Ohio, or Los Angeles, California — or the nearest Goodyear Mechanical Rubber Goods Distributor.

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PACKING
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THE GREATEST NAME IN RUBBER
GOODYEAR

business is apt to slacken off before each cotton report for the next two or three months, the slack will not be permanent.

The government acreage report leads one who has not studied the crop situation to believe that there will be lots of cotton, lower cotton prices than at present and consequently lower cotton goods prices later. It is too early yet to count bales. Acres in cultivation and bales ginned are two different things, and after the drought effects have been seen at the gins, after the spotted rains that have done their damage during the last two weeks are checked in, after possible army worm damage to the crop has been taken into consideration, then we will probably find that cotton is as high as ever, and almost as scarce. There is every reason in the world to believe that staple cotton will not only be scarce, but in some staples rare. This is the first time in cotton's history that there is no carry-over in the Delta. Reports from compresses there show a total of 11,764 bales on hand today as compared to 134,239 bales this time last year! We learn that about one-third of the Delta cotton land has been planted in short staple seed which will produce 1-1/16-inch cotton, instead of the longer staples for which that country is known. This is due directly to the government acreage curtailment program and lack of premium on longer staples during the last three years. The planters were forced to turn to baleage increase when they found their acreage curtailed. Short staple cotton yields more per acre than long staple. They were forced to sacrifice quality to volume. Mills using longer staples will have to scramble for them when the time comes around. Another item checked up on our side toward the necessity of raising prices!

Walsh-Healy Bill

There are two bills, passed during the dying days of Congress, which are sort of bothering us right now. No one seems to know just where we stand, and I guess the bills don't know where they stand either, for under this New Deal as soon as a bill gets passed some one starts the ball a-rolling to see if it can't be declared unconstitutional and to date the Supreme Court has been batting pretty high on its decisions. We have with us for discussion at this time, gentlemen, the Walsh-Healy and the Robinson-Patman Laws!

During the last three years the government has been our largest individual customer. A good part of the buying of textile products anticipated for this coming season will be done by the government. Bids on 8,622,000 yards of cotton for WPA, the initial purchase of the year's program of a proposed 150-million yard requirement of no less than 40 types of cotton textiles, were opened July 21. At the same time Madame Secretary Perkins announced that application of the Walsh-Healy Act providing for certain standards in government contracts would be made on September 28. These standards were decided upon after conferences between Miss Perkins and representative industrialists, labor leaders and procurement officers of the government.

The outline of the Department of Labor announcement is that all contracts awarded by the government, pursuant to invitations for bids on and after July 18, will be based on proposals containing the stipulations required by the Act: namely, an 8-hour day, and 40-hour week; no child labor nor convict labor to be used; no insanitary or hazardous working conditions; (this is to eliminate the so-called sweatshop element) and a standard minimum wage to be set when regulations made public.

The Robinson-Patman Act

The other legislative persimmon is the Robinson-Patman Act. Sponsored by independent store operators and aimed at their chain-store competitors, already a powerful repeal attempt is being lined up for next Congress by independent retailers as result of changes made in the original bill. The bill was designed to prevent price discrimination in favor of large purchasers. It is far more important in its complications and effects than was anticipated by anyone and if enforced will revolutionize selling practices.

Most spectacular trade result of this bill to date is the cancellation of the famous Goodyear Tire and Rubber Company-Sears, Roebuck & Company contract involving 150 million dollars in which the tire company agrees to the manufacture of a special brand tire over a period of ten years. P. W. Litchfield, president of the rubber company, said passage of the Robinson-Patman Act made it impossible to continue the contract entered into.

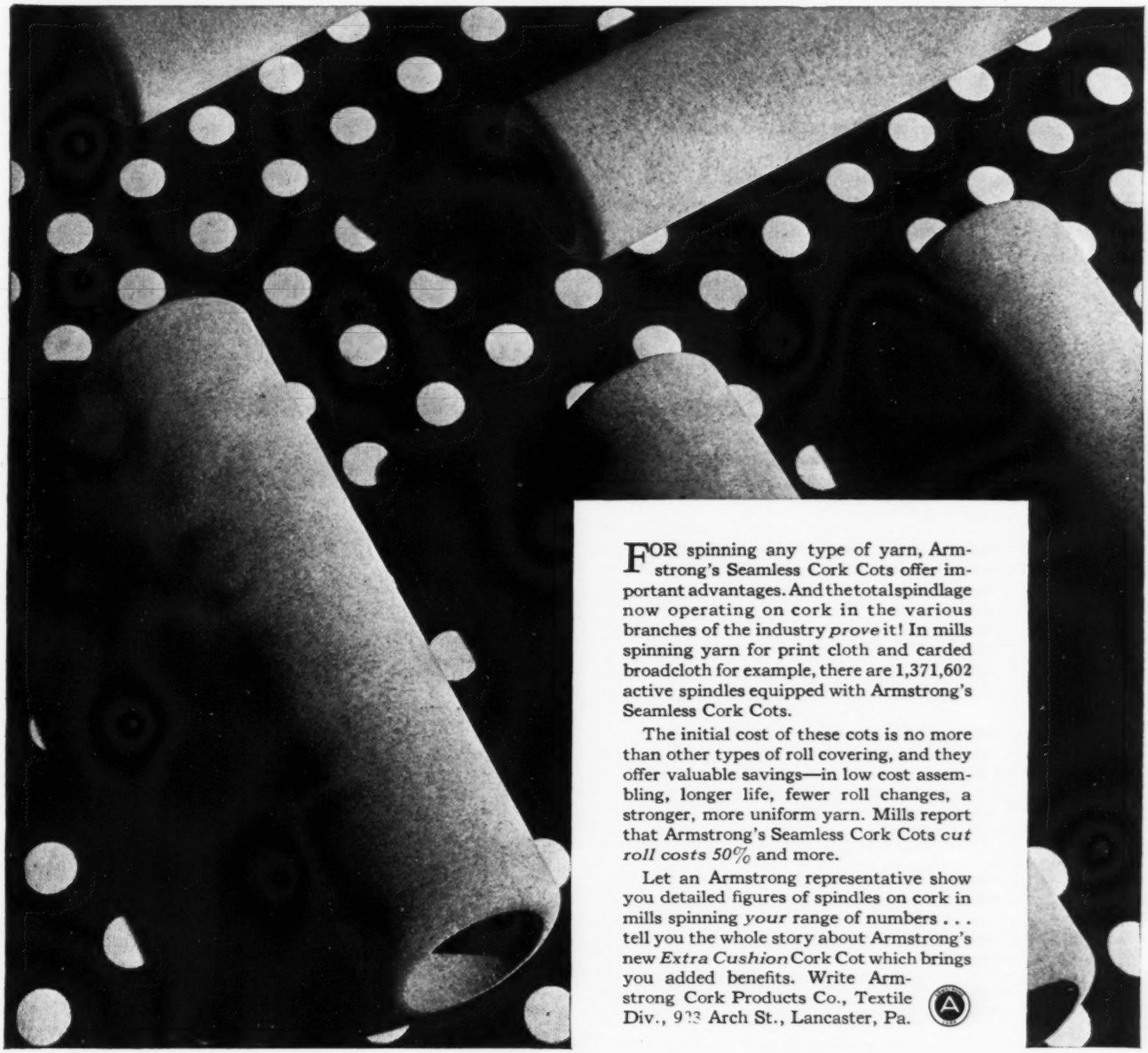
The cancellation of such a contract carries many hidden possibilities—shutting down perhaps of a large plant, throwing labor out of work, perhaps hunger and strikes. It is natural to assume that a company with a backlog of 150 million dollar contract for ten years had devoted a considerable portion of its production toward its satisfactory completion each year. Other mills which have signed long term contracts of similar nature on such items as towels, sheets, print cloths, etc., with mail order houses and chain stores will also suffer, for having attained such a contract they had probably retired from the active small-contract market, leaving that to their smaller competitors. Losing their large contracts, or their back-logs, they will naturally step into the other field again and in reality it will be the small mill, the operators of the small plant and the stockholders who will face the disastrous and insidious effects of this so-called price discrimination. Another disgusting period of price cutting will be the result—and all its horrors will follow, to the grief of the industry at large.

The Cotton Waste Situation

There is one more thing which has given me the itch this summer and that is the situation in the cotton waste market. Now cotton waste is not waste —it is a very important by-product of every cotton mill. In reality cotton waste is 33 per cent gross production of combed yarn mills and 15 per cent

MORE THAN 1,300,000 ACTIVE SPINDLES

OPERATING ON CARDED BROADCLOTH AND PRINT CLOTH YARNS ARE EQUIPPED WITH ARMSTRONG'S CORK COTS



FOR spinning any type of yarn, Armstrong's Seamless Cork Cots offer important advantages. And the total spindlage now operating on cork in the various branches of the industry *prove* it! In mills spinning yarn for print cloth and carded broadcloth for example, there are 1,371,602 active spindles equipped with Armstrong's Seamless Cork Cots.

The initial cost of these cots is no more than other types of roll covering, and they offer valuable savings—in low cost assembling, longer life, fewer roll changes, a stronger, more uniform yarn. Mills report that Armstrong's Seamless Cork Cots *cut roll costs 50%* and more.

Let an Armstrong representative show you detailed figures of spindles on cork in mills spinning *your* range of numbers . . . tell you the whole story about Armstrong's new *Extra Cushion* Cork Cot which brings you added benefits. Write Armstrong Cork Products Co., Textile Div., 933 Arch St., Lancaster, Pa.

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gross production of carded mills. When the President signed the tariff rate on Japanese imports the item of cotton waste was left off—and so it continues on the free list. Imports on Japanese waste have jumped alarmingly, During the years 1931-34, inclusive, imports of cotton waste from Japan amounted to 8,777,000 pounds valued at $280,077.00 In 1935 imports of cotton waste from Japan amounted to 26,243,600 pounds valued at $1,181,795. This year, in the first four months, January to April, inclusive, we received 12,268,000 pounds of Japanese cotton waste or nearly half as much as during the entire twelve months of last year. All imported waste is willowed or cleaned which makes the poundage proportionately higher than American waste. The processing tax days taught us new uses for waste and waste developed into one of our very best saleable commodities. It brought a price which balanced the low price of our yarn. But waste no longer commands the price it did, and one of the main reasons is because of the import competition. Waste utilization mills all over this country are switching to imported waste which is much cheaper than domestic waste. That is why you are having to sell cheap or let your waste pile up!

A new development on the waste situation is the knowledge that the Chinese National Government has prohibited the export of cotton waste from China. We don't know why yet—but leave it to the Chinese. They have some good reason which will come to light soon. Chinese waste accounts for more than 20 per cent of "unmanufactured" waste imported from all countries during the first five months of this year and more than one-third of waste imported from the Orient.

Yes, there are lots of things to think about now in order to make the grade for a good year when the new season opens. All statistics show that this summer has been the best retail trade since 1929. We know that stocks of all cotton goods are lower than at any time in years; we know that cotton is going to cost us something this fall (some staples selling at a real premium); we know that we have added costs of serious import ahead of us; we know that buying must go on in a fairly big volume and so we have just got to have gumption enough to raise our prices to keep up with our expenditures—so we can have balanced sets of books!

COMMENT ON THE COTTON MARKET

An Annual Review of the American Cotton Situation

New Orleans, August 15, 1936

IN GRADE, according to the annual report of the New Orleans Cotton Exchange, the 1935-36 American cotton crop averaged about Middling and was not quite as high as last year, when the grade was slightly better than Middling. The staple was slightly better than last year. However, the 1935-36 crop contained more than the usual percentage of untenderable cotton.

General conditions during the past season were more favorable. The most encouraging feature during the twelve months just closed has been the disposition on the part of the government to "go out of the cotton business". The Cotton Producers' Pool has ceased to be a factor in the cotton market. Its holdings both of spot cotton and futures contracts having been entirely liquidated prior to July 31. Of the loan cotton, the holdings have been decreased by about a million bales. The loan cotton stocks on July 31 were 3,216,506 bales.

Exports of lint cotton from the United States amounted to 6,018,000 bales, compared with 4,837,000 bales the previous season and 7,560,000 the season before last.

Again this season, Japan led with imports of 1,516,000 bales, being a decrease under last season of 56,000 bales. Great Britain, with imports of 1,466,000, nearly doubled its imports of the previous season, which amounted to 790,000. This was also the case with Germany, which country took 715,000 bales from the United States, compared with 450,000 bales the previous season.

Comment of Crop Reporting Board on Report

"Indications point to better than average yields per acre in all states except Virginia, the Carolinas and Oklahoma. In Virginia and the Carolinas dry weather after planting time interfered with the germination of cottonseed. This resulted in irregular stands, which is the principal cause of reduced yields in these states. The same condition affects the crop in parts of North Georgia, but this is more than offset in that state by favorable conditions in other parts of the state. In Oklahoma the prospective yield per acre is seriously curtailed by the drouth. The states adjoining the Mississippi River have especially favorable prospects. The yield forecast for Mississippi of 285 pounds per acre exceeds any yield ever recorded for that state. An all-time record yield per acre is also forecast for Missouri, and the yield indicated for Arkansas has been exceeded once during the past 30 years. The irrigation in New Mexico and Arizona, also have good prospects, and the field forecast for California has been exceeded only once. In interpreting reported condition in terms of probable yield per acre the Crop Reporting Board has made allowance, as in the past, for probable loss due to boll weevil in the basis of reports received to date concerning weevil presence and activity. These reports indicate loss from this source will be less than average."

CARRY-OVER JULY 31

Year—	1936	1935	1934
Southern mills	800,000	657,000	967,000
Counted interior towns	1,314,000	1,530,000	1,451,000
Uncounted towns and plantations	1,515,000	3,413,000	2,327,000
Total held in cotton belt	3,629,000	5,600,000	4,745,000
United States ports	1,222,000	1,075,000	2,440,000
Northern mill stocks	248,000	275,000	403,000
European mill stocks	595,000	520 000	780,000
European port stocks and afloat	674,000	605,000	1,168,000
Stocks in interior and in transit outside of the cotton belt	177,000	197,000	267,000
Japanese port and mill stocks and afloat	399,000	574,000	823,000
Other foreign port and mill stocks and afloat	51,000	158,000	295 000
Total Carry-Over	6 995,000	9,004,000	10,921,000
Linters carried over	263,000	276,000	323,000
Lint cotton carried over	6,732,000	8,728,000	10,598,000

COMPARISONS OF THE CARRY-OVER OF LINT COTTON FOR THE PAST THREE YEARS ARE AS FOLLOWS—

Year—	1936	1935	1934
In United States, bales	5,013,000	6,871,000	7,532,000
In Foreign Countries, bales	1,719 000	1,857,000	3,066,000
Total lint, bales	6,732,000	8,728,000	10,598,000

WORLD'S CONSUMPTION OF AMERICAN COTTON

Bales—Season—	1935-36	1934-35	1933-34	1932-33
United States, North.	1,358,000	1,391,000	1,507,000	1,323,000
United States, South.	5,587,000	4,514,000	4,798,000	5,365 000
Foreign	6,414,000	6,337,000	8,167,000	8,619,000
Total American for season	13,359,000	12,242,000	14,472,000	15,307,000

GOVERNMENT COTTON CROP REPORT, AS OF AUGUST 1ST

	This year	Last year
Acreage for harvest, estimated acres	29 924,000	27,335,000
Condition of crop	72.3	73.6
Indicated yield per acre, pounds	199.7	186.3
Indicated crop, bales of 500 lbs. gross weight	12,481,000	10,638,000

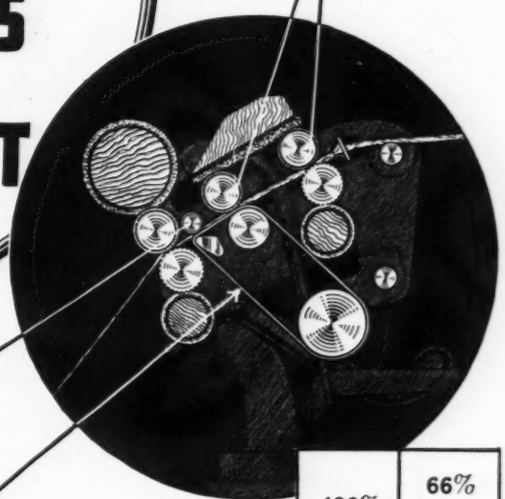
Here's How

MORE THAN 220 MILLS ARE ABLE TO PRODUCE

BETTER YARNS *at* LOWER COST

A DEFINITE BREAK DRAFT assured by two positively weighted rolls with highly effective fibre holding and fibre drafting surfaces.

1.



A CONTROL ROLLER feeds the shorter fibres with regularity, and allows the longer strength-giving ones to be drawn from the strand without breakage. 2.

A CARRIER APRON whose single function is transporting the strand of unlocked fibres. It has nothing to do with the drafting, and its performance is unaffected by age or atmospheric conditions 3.

100% COST WITH REGULAR SPINNING	66% COST WITH S-L-R BETTER DRAFT SPINNING
	SAVING UP TO 34%

No mill can afford to overlook the present-day trend toward Saco-Lowell Roth Better Draft Spinning. Experience in over 220 mills in the United States alone is emphatically convincing that: ● Costs are reduced, often as much as 34%. ● Yarns are stronger, smoother, more even, resulting in improved weaving and knitting efficiency.

● No matter what branch of the spinning industry is considered, selling prices are influenced by those mills using Saco-Lowell Roth Better Drafting.

Mills not equipped with Saco-Lowell Roth Better Draft Spinning are paying the difference in cost out of earnings or surplus.

How long can this waste continue without CAPITAL IMPAIRMENT ?

To those mills still using obsolete equipment, Saco-Lowell Roth Better Draft Spinning is **the only answer** to the demand for better yarns at lower cost.

BETTER DRAFT SPINNING MEANS **SACO-LOWELL ROTH** BETTER QUALITY AT A LOWER COST

SACO-LOWELL SHOPS, 147 MILK ST., BOSTON, MASS.

It is gratifying to know that there was a further sharp reduction in the world's carry-over of American lint, which, on July 31, was the smallest since the season of 1928-29, or 6,732,000 bales versus 8,728,000 last year, 10,598,000 year before last and the "peak" 12,911,000 in 1932. Therefore, progress, though slow, was made during the past few years in reducing the burdensome surplus to what it is now. However, in addition to the indicated crop, government holdings of loan cotton are not to be lost sight of though they may not be a factor in the market for some months to come.

Reduction in World's Carry-Over of American

Of the cotton carried over in the United States this year, which was 5,013,000 bales, 3,217,000 were held by the government, and 863,000 were American mill stocks and in transit, leaving 933,000 bales of what is called "free" cotton that may come in competition with new crop offerings. Offerings of foreign growths abroad have to be reckoned with also as a market influence.

A feature, which is a cause of satisfaction, is the fact that in the last three or four weeks, prior to the end of July, domestic mills sold goods freely. This, it is believed, will insure full operations through the summer months. This is unusual, it is said, even when general conditions are more normal than they are now.

CENSUS REPORT

United States— Bales—Season—	1935-36	1934-35
Consumption of lint, July	603,000	391,000
Consumption of lint, 12 months	6,348,000	5,361,000
Active spindles during July	23,250,000	22,312,000

The Census report tends to confirm advices to the effect that American mills, especially southern mills, are active and doing a good business.

What the Southern Mills Are Doing

Dallas Manufacturing Company, Huntsville, Ala., is planning a $30,000 repair and painting job to the homes in the village. Work is expected to begin shortly. The Dallas village has 250 houses.

Erwin Manufacturing Company, Huntsville, Ala., which has been closed since the latter part of June, resumed operations on July 27 with a part of the employees working; the full force is expected to be at work soon.

Morton Machine Works, Columbus, Ga., manufacturers of dyeing and bleaching machines, announced that their improved double circulating raw stock dyeing machines have been installed at Florence Mills, Forest City, N. C.; Bradley Manufacturing Company, Columbus, Ga.; Dyersburg Cotton Products Company, Inc., Dyersburg, Tenn.; and Union Manufacturing Company, Union Point, Ga. Improved dyeing machinery of this company has also been purchased by Minneola Manufacturing Company, Gibsonville, N. C.; Fieldale (Va.) Mills; and Iowa State Penitentiary, Fort Madison, Iowa.

Gainesville (Ga.) Cotton Mills are installing 156 42-inch looms to replace 32-inch looms.

Tubize Chatillon Corporation, Rome, Ga., has announced a $2,800,000 expansion program. The contract has been given to Robert & Company, Inc., Atlanta, Ga., architects and engineers. A large addition will be built to the plant and new machinery installed and houses added to the mill village. The Hopewell (Va.) plant will receive about $300,000 of the expansion fund.

Elliott Hosiery Mill, Catawba, N. C., will erect a building of modern brick to house its machinery.

Parks-Cramer Company, Fitchburg, Mass., and Charlotte, N. C., are building a 60-foot extension to their Charlotte plant. The additional space will be used to handle increased business for their central station and "Air-changer" equipment and automatic traveling cleaners.

Martha Mills, textile division of The B. F. Goodrich Company, Thomaston, Ga., are constructing an addition to their plant to be known as Unit C. It will be a three-story steel frame, brick, concrete and limestone building, 135x218 feet, and will be used to house preparatory and finishing machinery for balancing the spindles in existing Units A and B; the restrictions of the late NRA code on spinning spindle operation having unbalanced the previous equipment. Robert & Company, Inc., Atlanta, Ga., are the architects and engineers.

Locke Cotton Mills Co., Concord, N. C., have installed two high speed section-beam warping units for cotton yarns. The units were supplied by Cocker Machine and Foundry Company, Gastonia, N. C.

A charter has been granted Robinson Yarn Mills, Inc., Gastonia, N. C., to manufacture textile fabrics.

Cannon Mills Company, Kannapolis, N. C., will construct a new filter plant of a million-gallon capacity.

The Charles Mills, Red Springs, N. C., a division of Charles V. Thoms & Company, Inc., New York City, reopened the early part of July after having been closed for several months.

Clark Knitting Mills, Rutherfordton, N. C., have completed installation of a dye plant.

Salisbury (N. C.) Cotton Mills recently completed installation of four double circulating raw stock dyeing machines manufactured by Morton Machine Works, Columbus, Ga.

Lola Mills, Inc., Stanley, N. C., have purchased two additional dyeing machines and a combination bleaching machine from Gaston County Dyeing Machine Company of Stanley. Four new Foster winders have also been purchased and a new conditioning room has been built. A majority of the houses in the mill village have been reroofed and the dye-house and mill building have been painted.

Southern Mercerizing Company, Tryon, N. C., has completed the installation of Cocker Machine and Foundry Company's warp splitting equipment.

Hampton Spinning Mills, Clover, S. C., is installing 10,000 additional spindles which will give employment to about 125 more persons.

Willingham Cotton Mills, Macon, Ga., is constructing a building to be used for storage.

Davidson (N. C.) Cotton Mills is installing a dyeing division.

The Pinehurst Silk Mills, Hemp, N. C., is building a rayon finishing department.

The Johnston Manufacturing Company, Charlotte, N. C., is equipping its spinning rolls with the Guillet taper fitted neck. The Dixie Spindle & Flyer Company, Inc., Charlotte, N. C., is doing the work.

Roseglen Knitting Mills, Inc., Sumter, S. C., has purchased 40 new automatic Scott & Williams knitting machines.

Pee Dee Manufacturing Company, Mill No. 1, Rockingham, N. C., is having a "No Drip" slasher exhaust system installed on their slashers by The Textile Shop, Spartanburg, S. C.

Laurens (S. C.) Cotton Mill is having an installation of The Textile Shop's vacuum lint and dust collector on their 180-spindle automatic spooler.

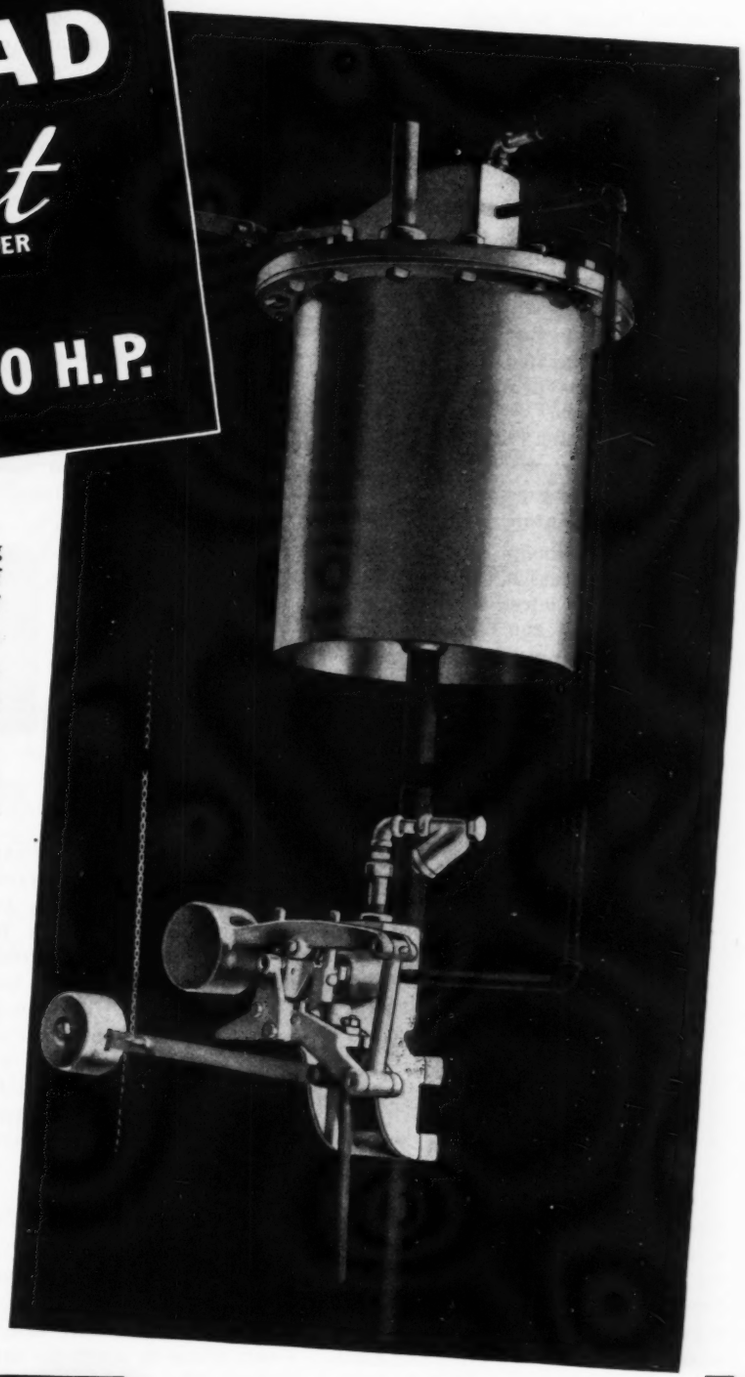
We present the

MOREHEAD *Midget*

DIRECT PRESSURE BOILER FEEDER

FOR

BOILERS UP TO 10 H.P.



Here is a distinct innovation in boiler feeding equipment—a unit that assures operators of boilers up to 10 H. P. a new high degree of economy, efficiency and freedom from worry.

Completely automatic, the Morehead Midget handles both condensation and make-up water with all the advantages of return trap practice. The resulting high feed water temperatures help maintain constant steam pressure—eliminating danger of low water. The Morehead Midget assures savings in fuel, water and steam comparable to those of larger Morehead installations.

FEATURING "REMOTE CONTROL"

An exclusive Morehead feature, "Remote Control" definitely places the Morehead Midget in a class by itself. The tank is independent of the valve mechanism. It may be installed in a normal operating position above the boiler, high off the floor. The valve mechanism, however, remains within easy reach. There are no trunnions to pack, no adjustments to make. Once installed, the Morehead Midget requires no further attention.

No Up-Keep—Easy to Install

Relieve yourself of the worry, bother and expense of old-fashioned boiler feeding methods. Enjoy the dollar-saving performance—the reliability—the increased capacity for work that *only* the Morehead Midget affords. Write for details. No obligation.

CLIP AND MAIL TODAY

MOREHEAD MANUFACTURING COMPANY

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MOREHEAD MANUFACTURING COMPANY

DEPARTMENT C **DETROIT, MICHIGAN**

I am interested in the Morehead Midget. Without obligating me in any way, send further details of this unit.

Name_____

Company_____

Address_____

City_____ State_____

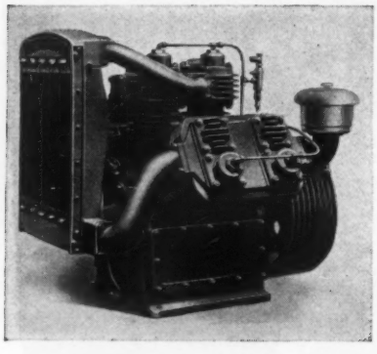
NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

Modern Payroll Methods

Burroughs Adding Machine Company, Detroit, Mich., have published a folder descriptive of payroll accounting plants for all types and all sizes of businesses. The folder is illustrated with representative forms for compiling information required by Social Security laws. One set of forms illustrates how to write check or envelope, employee's statement, earnings record and payroll sheet—all in one operation. The folder also pictures machines ranging from an inexpensive desk bookkeeping machine to an automatic accounting machine. When writing for this folder, ask for Form 7067.

Air-Cooled Compressors by Worthington

Worthington Pump and Machinery Corporation, Harrison, N. J., have announced as the latest development in their line, the 3- and 6-cylinder vertical-angle, 2-stage compressors. A line of compact, self-contained units with capacities ranging from 142 to 445 cubic feet per minute has been developed. The 3-cylinder unit has two low-pressure cylinders set opposite each other at an angle, with a high-pressure cylinder set vertically between them. The 6-cylinder unit is set up in the same manner with two cylinders side by side in each position. The units are available with Worthington Multi-V-Drive, direct-connected to the motor through a flexible coupling, or with the motor mounted directly on the end of the crank shaft. The compactness of this unit, combined with the variety of drives makes it easily adapted for any installation, it is said.



Air-cooled compressor

Automotive-type pistons with two compression rings. two oil rings, and full-floating wrist pins are used on all models. Articulated connecting rods permit the use of a large crank pin bearing and the same center line for all cylinders. A finned, radiator-type intercooler, with a fan which draws air through the cooler and over the cylinder head quickly removes the heat of compression. The crankcase is fitted with large cover plates, providing speedy and easy inspection of the running gear.

Feed Control Feature in Bottle Type Oilers

Trico Fuse Manufacturing Company, Milwaukee, Wis., has announced a new feed control feature in its Drip-Drop oiler for solid, wick, and waste-packed bearings, that, it is claimed, makes it so flexible as to meet the exacting requirements of bearings varying in size, speed, and temperature. An adjustment will make the oiler feed slow, medium, or fast as the bearing may require, and eliminates the hand oiling method, it is said. The new feature is designed to fit 95 per cent of the installations without drilling or tapping: it is made in three sizes. Besides, a data sheet is included in each package that gives information on various types of installations and means of cutting lubrication costs.

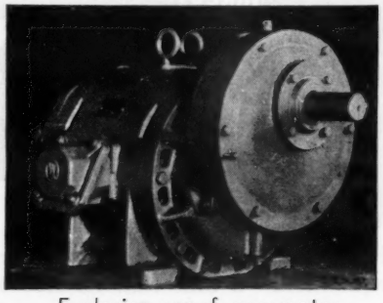
Bottle oiler with feed control

Brochure on V-Belt Drives

The Gates Rubber Company, 1524 South Western Ave., Chicago, Ill., is distributing a brochure describing the V-belt drives on which the large pulley is *flat*. The literature tells why and when the flat pulleys may be used and how to select or design such a drive. Some of the advantages of the V-belt as listed are compactness, positive no slip, quietness, cleanliness, low maintenance cost, easy installation, and rapidity with which changes may be made. An explanation of why the large pulley need not be grooved is given. An interesting discussion is also included with illustrations on the important points to look for in a V-belt that is to be used on a V-flat drive. Valuable tables and charts for determining the lengths, horsepower per belt, arc of contact factor, etc., are given for use of the mill executive.

Explosion-Proof Gearmotors

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., have announced a new line of single reduction explosion-proof gearmotors ranging in size from 1½ to 75 horsepower. For application on hazardous locations where speed reduction is required, these gearmotors are said to have many uses because of their compact design and high efficiency. They are built to carry the maximum torque the motors will develop; the gears are of the single helical type, heat treated by a special process to provide maximum load-carrying capacity and utmost resistance to wear and shock. Anti-friction bearings assure high efficiency and maintain correct gear center distances. These gearmotors have been inspected and approved by the National Board of Fire Underwriters for use in atmospheres containing gasoline vapors and other gases or vapors having equivalent or less hazard such as petroleum products, ethyl alcohol, methyl alcohol, acetone, and solvent vapors.



Explosion-proof gearmotor

Cold Water Unit Cooler

Modine Manufacturing Company, Racine, Wis., has placed a new cold water type unit cooler on the market. The cooler is said to be of simple construction yet effective in performing its duty of cooling. Suspended in a room, the cooler is equipped with a motor and fan which draws the room air through the unit, absorbing heat and moisture, and returns cooled and freshened air into the room. The system may be quickly and easily installed without expensive or complicated duct work, and without disturbing the existing construction or interior decorations. The unit provides for 360 degrees rotatability, which means that it may be turned in any direction without changing the piping connections. Tap or well water

SPINNA CALF
IS KIND TO YOUR YARN

Rolls covered with "Lively" Spinna Calf make your yarn strong—due to the lasting smooth cushion of naturally resilient calfskin.

LESS ENDS DOWN—since the springy surface of "Lively" Spinna puts no strain on the yarn.

HARD ENDS LEAVE NO TRAIL OF TROUBLE—grooves vanish at once after an ordinary hard end goes through.

AS KIND TO THE YARN ON MONDAY AS ON FRIDAY—once the rolls start turning, they're instantly even and round again.

PUTS AN END TO LAPPING UP TROUBLES—"Lively" Spinna prevents lapping up, a feature of extra importance in long draft spinning.

Brookside Mills
KNOXVILLE, TENNESSEE
A leading producer of fine goods acknowledges the superior points of Spinna Calf for superior spinning.

Use calf because it's "lively" A. C. LAWRENCE LEATHER CO. SPINNA CALF BOSTON *Choose Spinna because it's Lawrence*

A. C. LAWRENCE LEATHER CO.

SPECIALISTS IN TEXTILE LEATHERS

BOSTON, MASS. PEABODY, MASS. GREENVILLE, S. C.

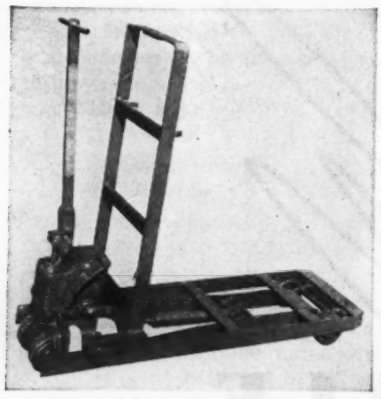
2456

that is sufficiently cold, water precooled by ice or mechanical refrigeration, or alcohol, glycerine or other noncorrosive brines may be used in the Modine unit coolers as the cooling medium.

The units may be used to provide circulation of air on days when the cooling operation is not considered essential.

Yale & Towne Trucks

Yale & Towne Manufacturing Company, Philadelphia, Pa., now build a hand truck that provides a means of handling skid platforms of varying underclearance. When the hinged frame is in an upright position, the truck may be rolled under platforms having clear-



Adjustable lift truck

ance of 6 to 7½ inches. Then by a few quick strokes on the handle, the load is raised from the floor. The lift is 3 inches. Where platforms with clearance ranging from 8 to 10 inches are to be moved, the hinged frame is dropped into place on the regular frame and quickly elevated.

Yale & Towne also builds the multistroke truck without the hinged frame and provided with a lift of 5 or 6 inches. The 6-inch lift model may be rolled under platforms with clearance of 6½ to 11½ inches. The load is elevated by pulling down on the handle and is then moved into freight cars or motor trucks on ball bearing wheels.

New Line of Controllers

The Bristol Company, Waterbury, Conn., has announced a new line of controllers for temperature, time-temperature, flow, liquid level, pressure, time-pressure, and humidity. The controllers are known as Master Free-Vane controllers and are offered primarily for applications where a greatly reduced sensitivity is required and where the load conditions fluctuate over a wide range. The new controllers are of the pneumatic-type and operate on Bristol's Free-Vane principle of control. It is said to be similar in many respects to the new Ampliset controller, an instrument equipped with a sensitivity adjustment which was recently announced by this company. The Master Free-Vane controller is designed to automatically compensate for each of the disturbing elements in industrial processes that from time to time have a tendency to upset the function of the control system.

Boiler Scale Remover

Oneida Electric Manufacturing Company, Green Bay, Wis., have recently announced a boiler scale remover and eliminator known as "Elek-Trol-Ik". It operates on the scientific principle of creating an electrolytic action within the boiler to produce corrosion that destroys all boiler scale without damage to the boiler plates or tubes. It is said to be a fuel saver. The system is designed for use in boilers up to 100 h.p. capacity, but more than one "Elek-Trol-Ik" may be used in larger boilers. It is marketed through industrial jobbers.

Folder on Handling Materials

The Lo-Hed Hoist Division of American Engineering Company, Philadelphia, Pa., has published a new folder entitled "Handle Materials via Lo-Hed". It includes a brief description of the ¼-, ½-, and 1-ton Monorail hoists, and the stationary hoists. Tables of capacities and ratings are carried also.

Circular Describing Floor Trucks

Lewis-Shepard Company, 244 Walnut St., Watertown (Boston) Mass., has distributed a new illustrated circular, No. 220, descriptive of its floor trucks for factory and warehouse use. Several types of new designs in caster trucks, rubber-tired trucks, and shelf trucks are shown.

Leaflet by Allis-Chalmers

Allis-Chalmers Manufacturing Company, Milwaukee, Wis., has prepared Leaflet No. 2226 on its Nordyke Service elevator of the continuous moving step type. It gives an illustrated description of how inter-floor travel for employees and products can be expedited in any building consisting of two or more floors. Many interesting applications and uses are cited for this equipment.

Radio-Active Treatment on Hose

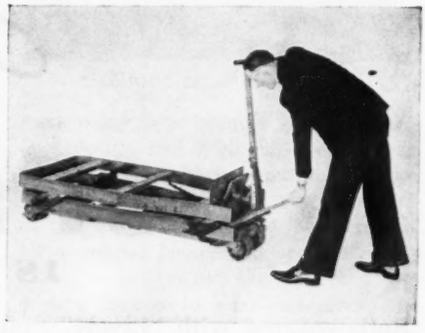
The Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J., has been granted a patent covering its radio-active treatment of fire hose. This treatment is applied to the cotton fabric used in the making of fire hose for industrial and municipal fire protection. It involves processing with rare earth metal salts having radio-active properties which effectively and permanently resist mildew and make the hose moisture repellent, rot-, and freeze-proof. Manhattan's fire hose treated by this method has a distinctive green color.

Folder by Stonhard

Stonhard Company, 401 North Broad St., Philadelphia, Pa., have released a folder entitled "Facts" which gives information on the use, characteristics, applications, and cost of their resurfacer. It states that there is a Stonhard material for every industrial building maintenance problem—floors, roofs, walls, and metal surfaces.

Adjustable Frame for Lift Trucks

Barrett-Cravens Company, 3255 West 30th St., Chicago, Ill., have a new adjustable frame for lift trucks. The frame when mounted on a 6-inch high truck in the lowered position can handle skids with an underneath clearance of 6½, 7½, 9½, and 10½ inches. When

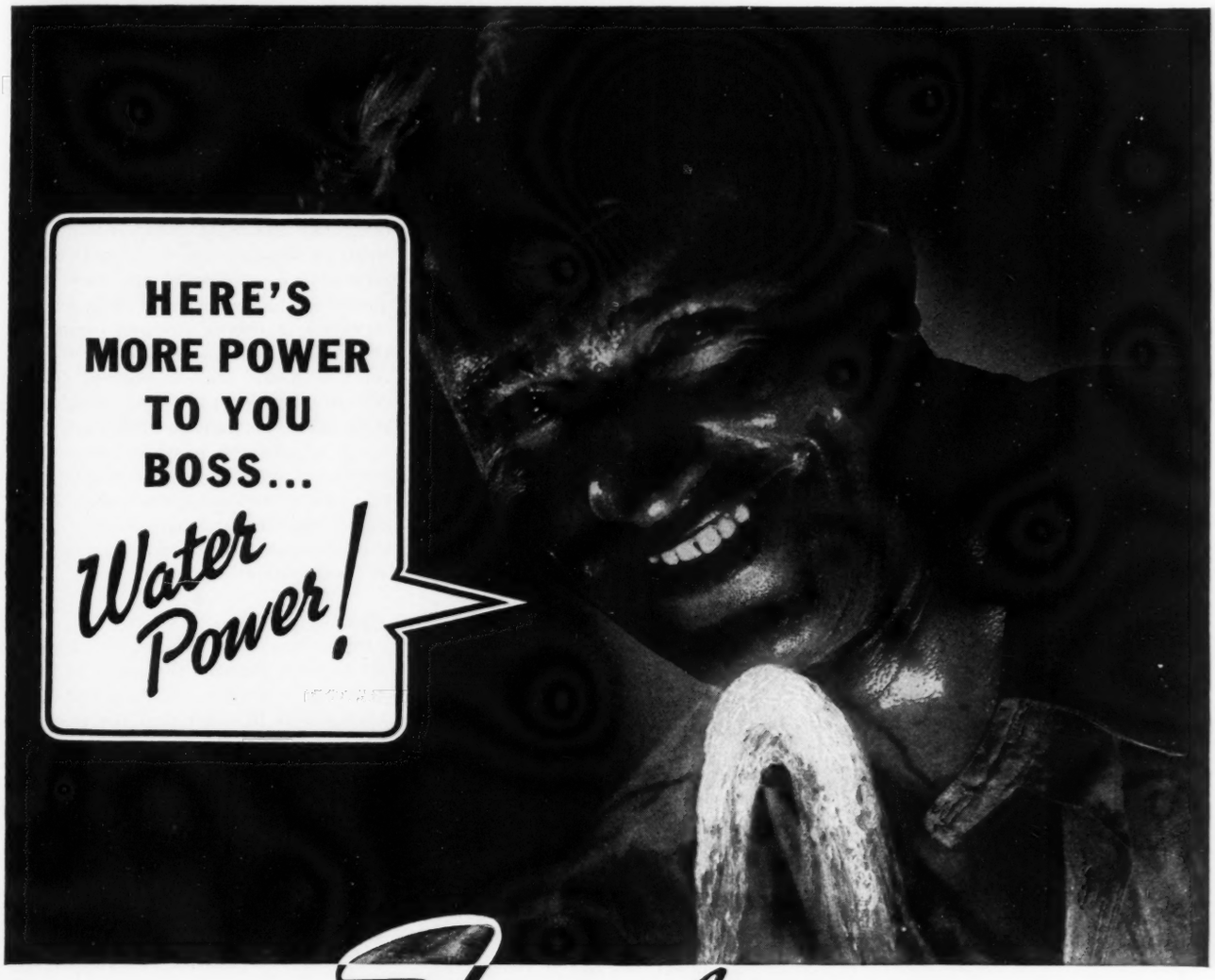


Adjustable frame for lift truck

it is mounted on a 7-inch high truck it will handle skids with any underneath clearance up to 12 inches. By pulling the auxiliary handle forward, the auxiliary frame is brought snug under the skid. The ratchet holding device keeps it in place. To lower the auxiliary frame, a slight kick on the release bar does the trick. It can be installed only on Barrett lift-trucks.

New Colors by Calco Chemical

Calco Chemical Company, Inc., Bound Brook, N. J., has announced three new additions to its line of colors. Calconese Brown R is used for the dyeing of cellulose acetate fibers; it produces a rich, reddish brown shade that is said to have very good fastness to light, washing, and dry cleaning. Calconese Blue MC is suitable for use in combinations to produce dark brown and wine shades. It is said to have good fastness to light, perspiration, hot pressing, washing, and dry cleaning. Calcoloid Golden Orange 4 RD Double is an addition to the line of dispersed vat colors. It may be used on raw stock, yarn, or piece goods.



MODERNIZE WITH *Frigidaire*

WATER COOLING EQUIPMENT

● Plan now to bring your plant up-to-date. Give it the stamp of progress and success. And give your men the finest drink that ever quenched a well earned thirst. Invest in *Water Power* in 1937 — invest in Frigidaire Water Cooling equipment!

Plenty of cool, refreshing water close at hand means comfort and goodwill for the men on the job. And from your own standpoint it means greater efficiency in every department . . . more production, fewer accidents. Frigidaire equipment also means a tremendous saving in dollars and cents over ice. A saving so great that Frigidaire actually pays for itself in a short time and continues to earn a big investment return for years to come.

There is Frigidaire Water Cooling equipment for every need. Efficient, dependable and economical. It will pay you to get complete details. Find out how little it costs you and how much it saves you to have cool, sparkling water throughout your plant. *Investigate at once, and include Frigidaire equipment in your 1937 budget. For free survey and estimate see your nearest Commercial dealer or write Frigidaire Corporation, Dept. 77-9, Dayton, Ohio.*

FRIGIDAIRE
MADE ONLY BY GENERAL MOTORS

TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . .

Bulletin on Unit Heater

Modine Manufacturing Company, Racine, Wis., have released a new bulletin, No. 836, that describes and illustrates a unit heater especially designed for use where lint or other foreign matter is present in the air. Because of their adaptability to the textile industry, these heaters are known as Modine Textype Unit Heaters. A special condenser construction practically eliminates clogging and the accompanying blowing out or cleaning of units operating under conditions where the air is laden with foreign particles, it is said.

New Onyx Catalog

Onyx Oil & Chemical Company, Jersey City, N. J., has published a new. 56-page, handy-size catalog describing its entire line of processing and finishing compounds. The products described cover bleaching, sizing, scouring, dyeing, finishing, and printing on silk, rayon, cotton, wool, hosiery, mixed fabrics, and ribbons. In addition to the products, the catalog also includes other helpful information, among which is a comprehensive article by Dr. H. H. Mosher on "The Importance of Accurate pH Control".

Publication by Louis Allis

The Louis Allis Company, Milwaukee, Wis., published an attractive number of their house organ, *The Louis Allis Messenger*, for the July-August number. A cleverly written editorial entitled "Getting Along" is included. The organ also explains and illustrates the company's splash-proof motor, carries an informative story on dynamic balancing of squirrel cage motors, and tells of the first self-ventilated explosion-proof motor. Two charts that may be clipped for reference are given on decimal equivalents and for converting Centigrade degrees to Fahrenheit.

Special Service on Stainless and Heat-Resisting Metals

Stainless Engineering & Machine Works is the name of a new division of The Cooper Alloy Foundry Co., 230 Broadway, Elizabeth, N. J., recently organized to supply a specialized machine work adapted to stainless and heat-resisting metals. The parent company announces that, as one of the original and largest producers of stainless steel castings since 1927, it has made special note of shortcomings in alloy machining, and in the new division has incorporated principles to rectify former mistakes and deficiencies; and that it now is equipped to design and construct with any alloy, particularly stainless steel.

The officials are Harry A. Cooper, president, and M. J. Robert, vice-president and general manager.

Correction

On page 70 of the August issue of COTTON, a news item appeared to the effect that James W. Gillespie, Dallas, Texas, had taken over the Texas, Louisiana, Arkansas, and Oklahoma territory of Flexible Steel Lacing Company. The address of the company was in error as Philadelphia, Pa.

The address of the Flexible Steel Steel Lacing Company is and has been, 4601 Lexington St., Chicago, Ill.

Industrial Colloids & Chemicals, Inc., Organized at Knoxville, Tenn.

Industrial Colloids & Chemicals, Inc., Knoxville, Tenn., is a new concern recently formed for the manufacture of specialty products for the textile, leather, paper, plastics, cosmetics, metal and woodworking industries. The official personnel includes several men widely known in the southern textile industry. Robert Cowan, vice-president of the new concern, formerly was connected with Quaker City Chemical Co., and has been identified with the chemical and textile industries for 30 years. G. M. Ellis, secretary-treasurer, was formerly an official of Fulton Sylphon Co., of Knoxville, and M. F. Nichols, vice-president, has had 30 years experience as consulting chemical engineer and analyst. C. N. Mynderse, vice-president and general manager of The Fulton Sylphon Co., of Knoxville, is a director of the new concern.

The plant of the new company will occupy a building at White Avenue and 11th St., Knoxville, Tenn., formerly used by the Knoxville Knitting Mills. The property is being remodeled, and will provide two stories and basement, with more than 10,000 square feet of floor space.

Lighting to Fit the Job Theme of Mercury Lamp Meeting

General Electric Vapor Lamp Company, Schenectady, N. Y., recently held a group meeting of its industrial lighting specialists and field representatives, at which time new possibilities in factory lighting to fit the specific needs of the job were disclosed. Particular emphasis was laid on the increased flexibility, both from the visual and economic standpoints, which has come about with the development of the new bulb-type mercury lamps and various color-corrected combinations of mercury-incandescent light sources.

A review of plants recently built or re-lighted disclosed that the higher levels of illumination required to meet sight-saving standards are now frequently achieved without appreciable increases in energy costs as compared to previous inadequate lighting. Where color problems are encountered, as in certain textile operations, new self-contained "combination" units are now being adapted on a wide scale. The degree of color-correction required is obtained by balancing the bluish effect of the mercury light against light from incandescent lamps, which is rich in red and yellow components.

Change of Name

St. Joseph Iron Works, St. Joseph, Mich., have changed the name of their company to St. Joe Machines, Inc. This change was in order that the name of the company might indicate the nature and scope of the business. The ownership, management, and policies of the company will remain the same.

Miller Heads Sales Department of Division for Republic

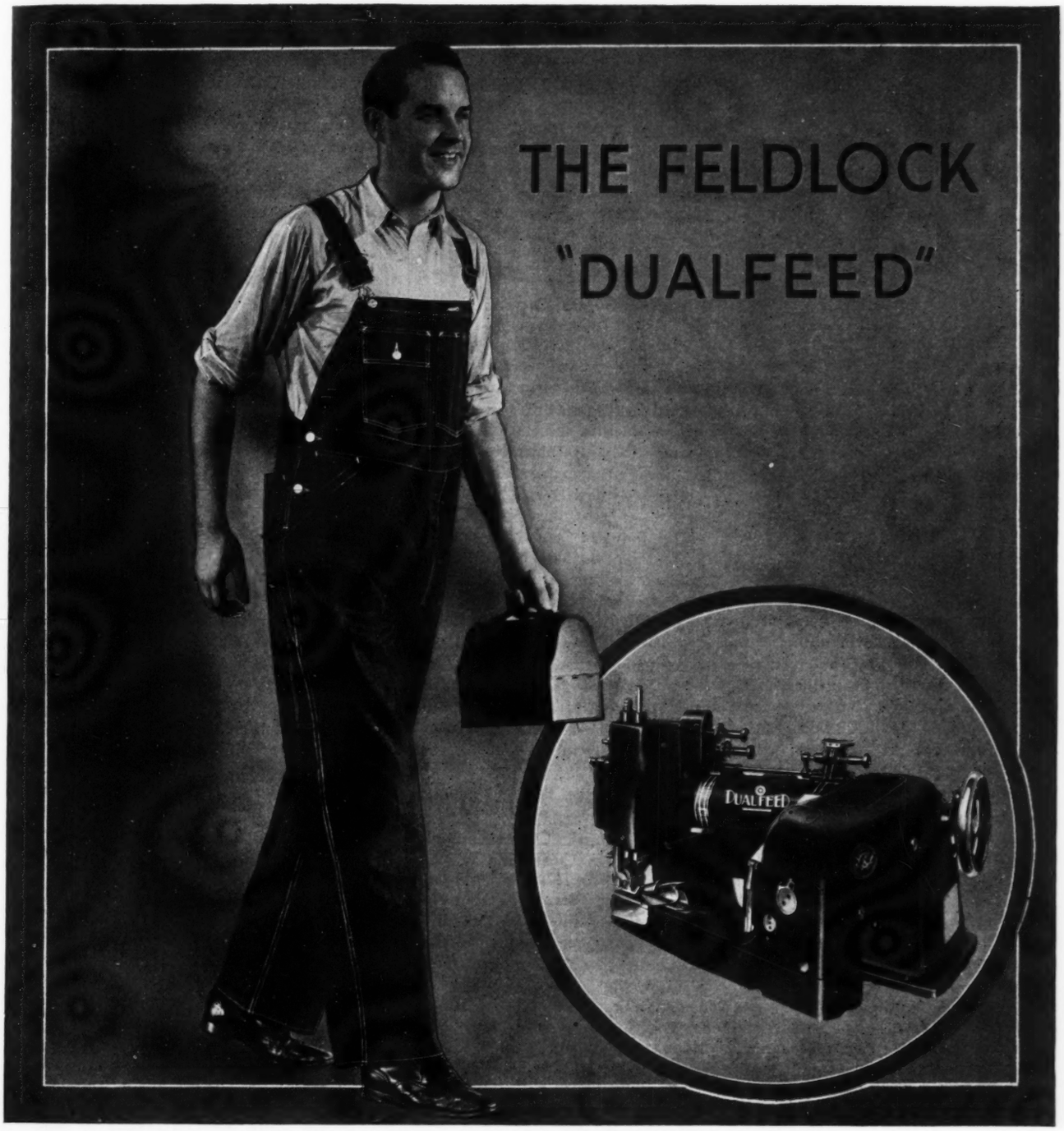
Frank C. Miller, formerly associated with the Detroit sales office of Republic Steel Corporation, Cleveland, O., has been appointed manager of sales, Tin Plate division of the company. Mr. Miller succeeds George E. Toten who recently resigned. Other changes in the organization are the promotion of P. H. Hubbard and J. B. DeWolf as assistant managers. W. H. Ungashick, formerly with Canton Tin Plate Company, which was recently acquired by Republic, has been named as field man. J. T. McBride has been made chief clerk of the division.

Bronaugh Made Sales Engineer for Allis-Chalmers

Joseph Bronaugh, who for the past seven years has been connected with the electrical division of Allis-Chalmers Manufacturing Company, Milwaukee, Wis., has been transferred to the company's district office in Richmond, Va., as sales engineer.

Torrington Appoints Representative for Pacific Coast

The Torrington Company, Torrington, Conn., has appointed as its Pacific Coast representative on knitting needles, E. G. Paules, 343 Bendix Building, 1206 Maple Ave., Los Angeles, Cal.



Sweet-Orr Overalls are felled on Feldlock "Dualfeed" Machines

USE THIS COST-CUTTING MACHINE FOR STRONGER— BETTER LAP SEAM FELLING

The Feldlock "Dualfeed" Machine for lap seam felling of medium and heavy weight materials as used in overalls, work pants, work shirts, melton jackets and windbreakers, offers manufacturers a superior quality of felling, at low cost. The machine has a synchronized top and bottom feed, and can be supplied in either 2 or 3 needle organizations. This machine operating smoothly and continuously at 3,000 stitches per minute produces a stronger and better seam at a lower cost. Let us demonstrate the cost-cutting Feldlock "Dualfeed" Machine on your own garments.

WILLCOX & GIBBS SEWING MACHINE COMPANY

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MANUFACTURERS AND DISTRIBUTORS OF WILLCOX & GIBBS AND METROPOLITAN SEWING MACHINES

EUROPEAN REPRESENTATIVES

WILLCOX & GIBBS SEWING MACHINE CO., LTD., 20 FORE STREET, LONDON E. C. 2, ENGLAND

Boger Transferred to Dayton Rubber's Philadelphia Territory

H. L. Boger of The Dayton Rubber Manufacturing Company, Dayton, O., has been transferred to the company's industrial division in charge of Dayton cog-belt sales in the Philadelphia territory. His headquarters are at 928 City Center Building, 121 N. Broad Street, Philadelphia. Mr. Boger has been with Dayton Rubber Manufacturing Company for 12 years. Prior to that time he served a number of years with two other rubber companies in their mechanical and production divisions. Mr. Boger has had experience in both sales and production of all types of rubber goods.

Mr. Boger

Rucks Manages Tagliabue Co.

C. J. Tagliabue Manufacturing Company, Brooklyn, N. Y., manufacturers of indicating, recording, and controlling instruments for temperature, pressure, level, flow, etc., has announced the promotion of A. F. Rucks to the position of general manager. Mr. Rucks has been associated with the Tagliabue Company for over 23 years and has gained experience in practically every phase of the industrial instrument business. The company also announced the appointment of W. C. Bennett as general sales manager in charge of the eastern territories, and E. D. Wacker as general sales manager in charge of the western territories.

Smith Regional Engineer

Roy S. Smith has been appointed regional engineer for the Mechanical Power Engineering Associates (Power Transmission Council) covering the Southeast. Victor A. Hanson, who has been located in Atlanta for this organization, has been transferred to the new headquarters at 75 State St., Boston, Mass. Mr. Smith's headquarters are at 1765 Peachtree St. (Apartment G), Atlanta, Ga.

Klumpp-Glynn as Representatives

The Robinson Yarn Mill, Gastonia and Dallas, N. C., and Borden Manufacturing Company, Goldsboro, N. C., have appointed Klumpp-Glynn & Company, Philadelphia, Pa., as their representative. The Robinson Yarn Mill will be represented exclusively everywhere except in New England, and the Borden interests have given Klumpp-Glynn exclusive distribution in Maryland, Pennsylvania, New Jersey, and New York City.

American MonoRail Establishes Southern Office at Greenville

The American MonoRail Company, Cleveland, O., manufacturers of overhead handling and automatic cleaning equipment, have opened a southern office at 509 Masonic Temple, Greenville, S. C. Curran S. Easley, representative of the company, is in charge.

Discussion Group Organized at Fall River

The second organization meeting of the Textile Analysts, Designers and Technicians Association was held at Fall River, Mass., July 11, 1936. The purpose of this association is the collection of technical data for the mutual benefit of all members and the development of new ideas and to keep abreast of new developments in the textile industry, etc. Officers of the newly-organized association are Henry Fallows, Jr., Berkshire Fine Spinning Associates, president; Edmund B. Gifford, Luther Manufacturing Company, vice-president; and Thomas E. Mason, Jr., Pilgrim Mills, secretary. Technical advisor for the association is Alfred Higgins of the Bradford Durfee Textile School, Fall River, Mass. The next meeting will be held the evening of September 28, 7:30 P. M., at the Bradford Durfee Textile School.

Reliance Electric Opens District Office in Greenville

The Reliance Electric & Engineering Company, Cleveland, O., makers of motors for textile mills and finishing plants, has opened a district office in Greenville, S. C., under direction of K. S. Lord, who is manager of the southern territory.

Textile Degrees Awarded to Raleigh Girls

Misses Eleanor Green and Virginia Reinheimer, both of Raleigh, N. C., were the first women to receive undergraduate textile degrees at N. C. State College. Both girls have accepted positions with the Carolina Cotton and Woolen Mills, Spray, N. C.

Patents Granted

According to Paul B. Eaton, patent attorney, Charlotte, N. C., William B. Hodge, Charlotte, was awarded a patent on apparatus for cleaning textile machinery. This is assigned to Parks-Cramer Company of which he is an official. W. H. Suttenfield, Olin York, and V. A. Howard, all of Statesville, N. C., were issued a patent on a machine for random dyeing of packages of yarn wound on a perforated holder. William G. Reynolds, Charlotte, N. C., and P. A. Gwaltney, McColl, S. C., were granted a patent which relates to spinning. I. B. McKeown, Chester, S. C., was awarded a patent on a flake filling attachment for spinning frames. frames.

Additional Personal and Obituary Items

GEORGE D. SIMPKINS, SR., has resigned as superintendent of spinning at the Cherokee Spinning Company, Knoxville, Tenn., and will now have charge of rayon, wool and silk, carding and spinning and rayon throwing and twisting at the Eton Mill Company, Shelby, N. C.

J. F. PLEXICO, formerly overseer carding and spinning, Granite Falls (N. C.) Manufacturing Company, has accepted a similar position with the Bibb Manufacturing Company, Porterdale, Ga.

CHARLES M. MCLEOD, vice-president of the American Printing Company, Fall River, Mass., will be the executive head of the Consolidated Textile Corporation when it is re-organized under Section 77-B of the National Bankruptcy Act.

CHARLES W. FOLDS, Chicago, has been appointed administrative assistant covering outlying mills and special reports, to LUTHER H. HODGES, production manager of manufacturing division of Marshall Field & Co., with headquarters at Spray, N. C.

Obituary

CLYDE C. COBB, SR., formerly superintendent of the Micolas Cotton Mills and Opp Cotton Mills, Opp, Ala., succumbed in July to a lengthly illness of angina pectoris.

JOHN M. HARDISON, former secretary-treasurer of the Wade Manufacturing Company, Wadesboro, N. C., passed away the latter part of July. Mr. Hardison had retired from business several years ago.

R. BLAIR HASKINS, paymaster at the Riverside & Dan River Cotton Mills, Danville, Va., succumbed to a cerebral hemorrhage August 3. He had been associated with the mills for 25 years.

DANIEL S. PRITCHETT, superintendent of Mill No. 1, Georgia-Kincaid Mills, Griffin, Ga., passed away on August 11, following an attack of acute indigestion. Mr. Pritchett, who was 60 years of age, had been connected with Georgia-Kincaid Mills for more than 20 years.

RHOADS TANNATE CHECK STRAPS

Have given users greater freedom from trouble, fewer replacements and less production time lost, because they last so long.

On Model X Looms, at 190 to 200 picks per minute, Tannate Check Straps have shown unusual length of life. And the length of life is a mighty important matter in check straps. For the time out to change a strap may cost, in lost production and lost wages, far more than the Tannate Check Strap.

How would you like to have Check Straps, and other textile straps and leathers of quality, that stand up to their jobs, for many months, and save you trouble.

RHOADS TANNATE BELT PRESERVER

Will make your Rhoads Belts, or other leather belts, last longer and give more efficient transmission service, because it lubricates the fibers of the leather, keeping the belt from becoming dry and harsh.

Tannate Preserver also saves power losses by preserving the right kind of pulling surface and maintaining the power transmitting capacity of your belts.

In the making Rhoads Leather Belts receive the quantities of lubricants to give them the right belt texture for efficient service. As this lubrication is lost in service. renewing it with Rhoads Tannate Belt Preserver will keep your belts more fit.

J. E RHOADS AND SONS

MAKERS of TANNATE PRODUCTS

Philadelphia 35 N. Sixth St. Chicago 26 N. Clinton St. Cleveland 1200 W. Ninth St.
New York 102 Beekman St. Atlanta 88 Forsyth St. S.W. Factory. Wilmington, Dela.

CLOTH

ROLLER

CLEARER

SLASHER

Palmer - Sanforizing- Lapping - Stamping- and Other Mechanical Fabrics

HONEST quality and continued uniformity have made PHILADELPHIA Felt the standard for Textile use. There's a great difference in felt, and to be sure of getting just the right cushion, a thick, strong nap that won't pull out, as well as the correct porosity, be sure you get genuine PHILADELPHIA Felt.

If you have a felt problem of any nature, let us help you solve it. Write us today.

PHILADELPHIA FELT COMPANY
FRANKFORD, PHILADELPHIA, PA.

PERSONAL NOTES
about Men You Know

H. Ross Brock, recently a member of the technical department of Martha Mills, textile division of The B. F. Goodrich Company, Thomaston, Ga., has become southern representative of Whitinsville Spinning Ring Company, Whitinsville, Mass. After receiving a degree in Textile Engineering from Georgia Tech in 1932, Mr. Brock became connected with Martha Mills where he ran tests in every department of the mill. In addition to having charge of the laboratory and size control, he worked on the problems of modernization and expansion and was successful in designing twister rings and travelers for improved operation. Mr. Brock will make his present headquarters at the Poinsett, Greenville, South Carolina.

Mr. Brock

Virgil E. McDowell, who resigned as overseer of carding and picking at the Eagle & Phenix Mills, Columbus, Ga., recently after ten years of service, has become overseer of carding at the Rosemary Manufacturing Company, Rosemary, N. C. Mr. McDowell was graduated in textiles, class of 1924, at the Georgia School of Technology, Atlanta, Ga.

P. A. Gwaltney has been made president of the Marlboro Cotton Mills, McColl, S. C., succeeding D. K. McColl, who has become chairman of the board. Mr. Gwaltney has been general superintendent of the mills for the past 13 years.

W. A. Hunt, formerly superintendent of the Meritas Mills, Columbus, Ga., is now superintendent of the Pickett Cotton Mills, High Point, N. C.

W. L. Brown has been made assistant superintendent of Opelika (Ala.) Mills, Inc., succeeding James O. Cobb. Mr. Brown was formerly master mechanic and will continue his duties in that position.

John G. Wood has been elected president of the Edenton (N. C.) Cotton Mill Company to succeed the late Henry G. Wood.

W. H. Gibson, Jr., has become connected with Cotton Mill Products Co., Mobile, Ala. He was until recently superintendent of the Jennings and Mansfield Mills, Lumberton, N. C., and is a past-president of the Southern Textile Association.

Hugo Sander, formerly in the sales organization of Industrial Rayon Corporation, Cleveland, O., has become a member of the executive staff of the Palisades Piece Dye Works, Inc., Weehawken, N. J.

Mr. Straus

A. Straus, Jr., president of the Archer Hosiery Mills, Columbus, Ga., was elected vice-president (full-fashioned division) of the Southern Hosiery Manufacturers Association, at its annual convention at Signal Mountain, Tenn., recently.

H. L. Childress, formerly of Alta Vista, Va., is now overseer of weaving in the Gainesville (Ga.) Cotton Mills.

J. J. Newton, formerly with the Martin Dyeing & Finishing Company, Bridgeton, N. J., has been made superintendent of the Fairforest Finishing Company, Clevedale, S. C., succeeding Sam Elliott, who resigned to resume a previous connection with the Delta Finishing Company, Philadelphia, Pa.

O. A. Mace, who has been in the weaving department of the Springstein plant, Springs Cotton Mills, Chester, S. C., has been made superintendent of weaving at that plant.

Walter T. Jenkins has been made general manager of the Rock Hill (S. C.) Printing and Finishing Company, to succeed Archie O. Joslin, treasurer and formerly plant manager, who will spend more of his time with the selling organization of the company. J. H. Easley has been made assistant manager, William H. Grier, superintendent, and George P. Feindel, assistant superintendent. George Howell is the divisional superintendent of the company.

J. B. Shelton, formerly superintendent of weaving, Manetta Mills, Monroe, N. C., has joined the organization of the California Cotton Mills Company, Selma, Ala., in a similar capacity. He is succeeded at Manetta Mills by J. A. Turner, of Charlotte, N. C.

Joe H. Callicott has been promoted to vice-president in charge of production at the Se-Ling Hosiery Mills, Nashville, Tenn., effective October 1, succeeding K. E. Thierfelder, resigned. Mr. Callicott has been connected with the plant since 1929. Mr. Thierfelder, prior to his connection with Se-Ling in 1932, had been manager of the Bethayres (Pa.) Knitting Mills and superintendent of the Holeproof Hosiery Co., Milwaukee, Wis. His plans for the future have not been announced.

B. R. Burnham has resigned as superintendent of No. 4 plant, Pelzer (S. C.) Manufacturing Company.

N. H. Welch has resigned as superintendent of the Florence Mills, Forest City, N. C.

L. E. Cromer has resigned his position as cotton classer of the Lousdale Company, Providence, R. I., to become purchasing agent for the Greenwood (S. C.) Cotton Mills.

E. P. Sheetz, formerly overseer of weaving at the Cabot Manufacturing Company, Brunswick, Me., has resigned this position to accept a position as superintendent of a new weaving plant in Syria.

John A. McCarn has resigned as overseer spinning at the Norwood (N. C.) Manufacturing Company to accept a position as overseer spinning, spooling, and twisting at the Stowe Spinning Company, Belmont, N. C.

B. H. Bridgman, formerly of Gainesville, Ga., has been made overseer weaving, Whitney (S. C.) Manufacturing Company.

Clovis Gignar has been promoted from assistant superintendent to superintendent of the Mascoma Mills, Lebanon, N. H. Harold Richardson has been made designer.

Norman Simpson, who was formerly night foreman of the Sparta (Tenn.) Silk Mills, has been made manager of the Roane Textile Corporation, Rockwood, Tenn.

E. B. Powell, Westminster, S. C., has been made overseer cloth room, Gossett Mills, Anderson, S. C.

(Additional personals and obituary items on page 88)

The effect of Spooling on LOOM STOPS . . .

☆ Careful spooler or winder girls with hand knotters can wind yarn without spooler kinks, but it depends entirely upon the care exercised and it is difficult to get them to do it.

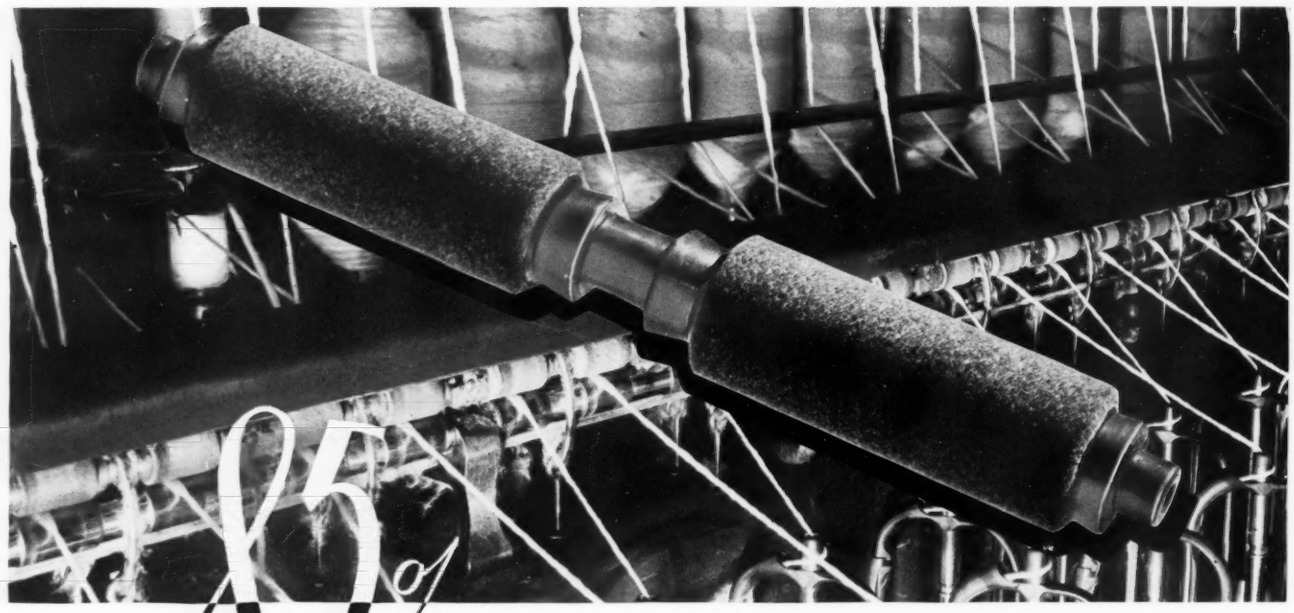
☆ The operator on the Automatic Spooler, on the other hand, has nothing to do with tying the knot or controlling the slack after tying.

★ **Information derived from extensive tests shows that this elimination of the human element results in approximately 90 per cent less spooler kinks. and it has been demonstrated by these same tests that a greater part of warp stoppage in the loom is caused by spooler kinks.**

☆ The importance of the Automatic Spooler in reducing loom stops can be appreciated by the fact that a careful analysis of loom tests covering a period of over nine years showed that 92.2 per cent of the total reduction in stops must be attributed to Automatic Spooling and only 7.8 per cent to High Speed Warping.

The Automatic Spooler is exclusively a part of the

★ BARBER-COLMAN SYSTEM of SPOOLING and WARPING



85% SAVING WITH

SONOCO

CORK COTS

One mill,* using leather, had a roll covering cost of $1125.00 over a given period. SONOCO Cork Cots were installed—and over the same period of time, running the same yarn counts—COSTS WERE CUT TO $157.60. This saving of 85% may be exceptional, yet we have many reports showing savings from 50% to 75% to be normal—when SONOCO Cork Cots are used.

The SONOCO Cork Cot is constructed to retain its uniform density—there is no sagging, elongation or bulging in use. By reason of its exclusive semi-rigid, reinforced construction, the SONOCO Cork Cot is the easiest and cheapest cot to apply.

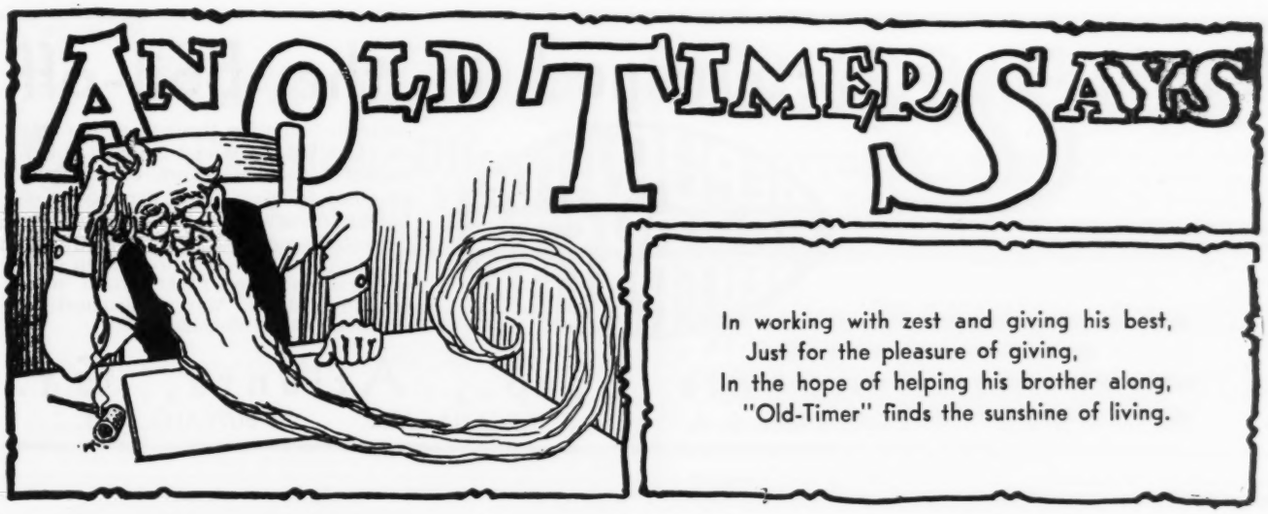
An adequate test run in your own mill will prove these facts. Let a SONOCO technical man talk with you about your own specific case.

*Name upon request.

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Random Thoughts to Make You Think

FELLOWS, do you remember that OLD-TIMER article entitled "Never Too Old"?* Well, it went on to explain why every man should be studying the business he is in, no matter how old he is. In fact, some of our most successful men have achieved success after they had been given up as being too old.

Most all superintendents and overseers have either owned or know of the fine tools made by L. S. Starrett & Company.

I quote from an account of L. S. Starrett's career, written about 20 years ago:

"Thirty years ago he was 50, a man without a fortune or capital, and under the handicap of growing deafness.

"Looking him over, it might have been said 'He is up against it'. If he were only 20 years younger and could hear well, etc., etc.

"Today he is president of L. S. Starrett & Company. He is rated as a millionaire and has earned his right to his money and his title of a great tool maker *since* his fiftieth year.

"Starrett is the founder of L. S. Starrett & Company—the president—not just a figurehead. He sits at his desk daily and follows the details closely. As the leader of 800 employees, he does not say, Go, but from far ahead he beckons to them, Come!"

The article went on to tell how at that time he still invented many tools and planned for active selling campaigns, etc.; in fact, it went on to enumerate how this 80-year *young* man did what the average man at 50 years would think he was getting too *old* to attempt.

This illustration, and there are many more that I could mention, brings out my contention that you as a mill man are never too old to work and study for advancement.

Well, fellows, what are you doing about it?

Are you setting aside two nights a week for actual study? Are you really trying to keep up-to-date in your work? Are you trying to improve your vocabulary so you can converse more intelligently with your superiors?

Why not start that simple course of study that is one of the OLD-TIMER study courses where you are taught how to increase your vocabulary? Just to see if you need it, make this test for one week: When you are reading your daily paper, take out your pencil and mark every word you come to that you cannot give a correct meaning of, and after you write down on a pad what you think the word means, then look it up in the dictionary and see if you are correct.

This will be much more fun than working a crossword puzzle, and at the same time you may be starting something which will put dollars in your pocket.

With nothing to lose, and OLD-TIMER'S assurance that there is something to gain, why not try it?

* * *

Most anyone can succeed when everything goes successfully. The good man shows up when everything goes wrong.

The person who beats the other fellow doesn't generally have to hunt a job; the job hunts.

The moral to this is that if you are outstanding in your work a lot of your faults can be overlooked.

* * *

Your bad traits are easiest for your friends to remember, therefore you must pile up enough good traits to "swamp" them.

* * *

Habits are so easily formed. Young man, be sure you do not start out with a "charge account."

* * *

"Beat the other fellow" is a darn good slogan, if you will remember it often enough and really try to do the constructive thinking that will bring about that result.

* * *

Most any overseer or superintendent can run the job when everything goes smoothly, but it takes a depression or some other tragedy, often, to bring out a good man.

* * *

Can you take one of your employer's ideas and put it "across" like it was your own?

That is one of the things he is paying you for, you know.

*Page 1031, July, 1929, COTTON.

Profits are Determined in the Boil-off

It doesn't make any difference how high the quality of weaving, the market value of grey goods can be greatly impaired or even totally destroyed in the boil-off. Your profits are in direct proportion to the expert care and attention given in the boil-off.

Real Quality—APPEARANCE AND DURABILITY—demands a stable and controlled solution throughout the boil-off. DEPURATOR and NEUTRALITE Products guarantee such control with an absolute minimum of dependence on human thought and attention. These perfected products are "fool-proof" and will help you to lower production costs and realize more profits from more salable products. May we demonstrate without cost or obligation?

DEPURATOR PRODUCTS NEUTRALITE

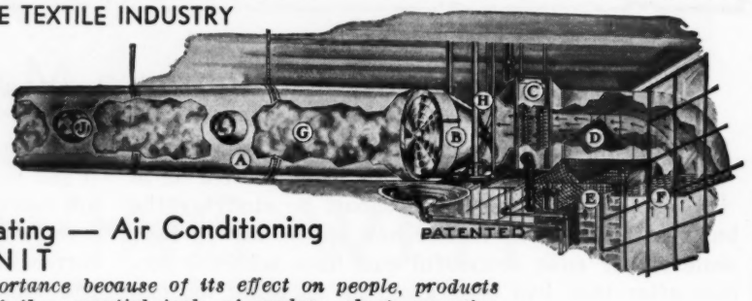
Detergent Products Corp., Atlanta, Ga.

RALEIGH, N. C. COLUMBIA, S. C. TEXARKANA, ARK. BUFFALO, N. Y.

THE MOST MODERN EQUIPMENT FOR THE TEXTILE INDUSTRY

The

BAHNSON HUMIDUCT



For Humidifying — Heating — Ventilating — Air Conditioning

ALL IN ONE UNIT

Air Conditioning in industry is growing in importance because of its effect on people, products and profits. It must be considered as one of the essential tools of modern plant operation.

THE BAHNSON COMPANY, WINSTON-SALEM, N. C.

SALES ENGINEERS:

D. P. STIMSON, S. C. STIMSON, Winston-Salem, N. C.
I. L. BROWN, 886 Drewry St. N. E., Atlanta, Georgia
F. S. FRAMBACH, 703 Embree Crescent, Westfield, N. J.
D. D. SMITH, 814 W. South St., Kalamazoo, Michigan

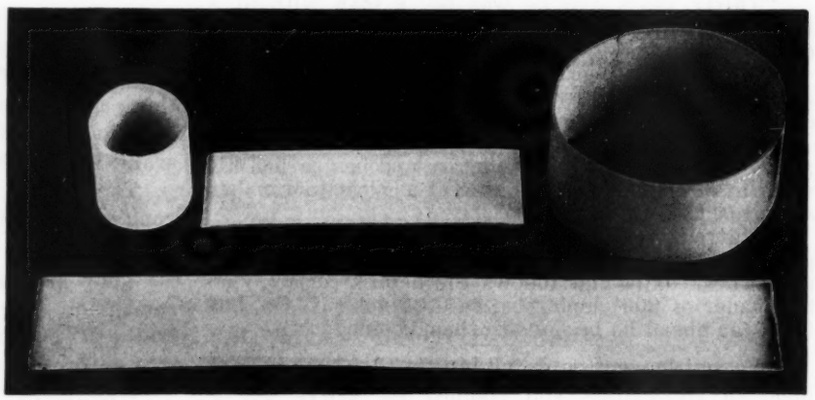
TEXTILE APRON CO.

905 SOUTH MAIN STREET,

EAST POINT, GEORGIA

●

WE are equipped to furnish long draft aprons for all purposes. Workmanship and materials guaranteed. Send us samples of your aprons and we shall be pleased to quote you prices.



CLINTON STARCHES

FOR ALL TEXTILE PURPOSES

Manufactured by

CLINTON COMPANY

CLINTON, IOWA

QUALITY SERVICE

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

Causes of Uneven Roving

A discussion of every-day problems that will bear reviewing . . . . . .

EDITOR COTTON:

This letter is not written with the idea that we are about to become pioneers in an unexplored field. Far from it. We are going to wrestle with our old chronic complaint—"Uneven Roving". We may not be able to tell any of the old timers anything that will be news to them, but we'll try to put it across with a little different slant in an effort to make it interesting to read. To the new recruits in the business it will prove, I hope, a source of real information.

The following list of causes of uneven roving I feel, will pretty thoroughly cover the subject. I will try to give as far as I possibly can, the full reason for each defect brought out.

1. *Drawing rolls set too close:* This trouble causes the staple to pull through in tufts without properly drafting it. It also breaks a large percentage of the staple which reduces the breaking strength of the finished yarn.

2. *Drawing rolls set too wide:* Here we have a condition that fails to give smooth attenuation because the pairs of rolls through which the roving passes cannot draft effectively. As there is no grip on the fibers, the short stock will go along in bunches to the next process.

3. *Too much twist in the back roving:* Roving so defective is very hard to draft. It requires very heavy weighting on the rolls to prevent the strand from slipping between the top and bottom rolls. Roving of this nature also cuts a groove in the leather surface of the top rolls quickly, which tends to aggravate further the poor drafting qualities.

4. *Too little twist in the back roving:* This causes the roving to stretch as it is pulled through the creels.

5. *Top rolls in poor condition:* Soft cots, broken surface on the rolls, and fluted rolls cause uneven drafting.

6. *Top rolls requiring oil:* Any hesitation of the top rolls causes both thick and thin places in the roving. They should be oiled thoroughly.

7. *Not enough weight on the top rolls:* This, of course, allows the roving to slip between the top and bottom rolls. Uneven roving is pronounced if a hard twist or a heavy back roving is used.

8. *Top rolls not being cleaned often enough:* Sometimes excessive fly collects on the ends of the top rolls wrapping themselves very tightly on the ends which causes the roll to bind in the bearing. This also allows oil to soak into the cot thus shortening the useful life of the leather.

9. *Running self-weighted rolls under conditions they were not intended for:* This particular type of roll equipment is essentially designed for the longer staple, smooth cottons, on medium and fine numbers where the stock can be drafted with comparative ease. Usually when a self-weighted roll is used on the roving frame, a very fine hank is being run. The rolls are set up to staple at least, and it is a very common practice to set them closer than the length of staple. I have in mind at present a mill where the roving frames were equipped with self-weighted rolls, yet they were running Texas cotton on 30s warp yarns. Needless to say, they produced a roving that was very uneven because the stock was not properly drafted; the roving was too coarse for this type roll to draft well, plus the added disadvantage that the rolls could not be set close enough to run the staple properly.

10. *Running abnormally short drafts:* Short drafts do not straighten out the fibers as effectively as longer ones do. The roving delivered may have thick places in it and a certain percentage of the ends will usually cockle in the running, thereby cutting the production of the frame.

11. *Running abnormally long drafts:* Unevenness will result in this case because the strand is subjected to what we might call a "pull-apart" action. Especially is this true if there are very many short fibers in the stock. Very thin places will result wherever too many short fibers are present in the strand.

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

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12. *Running stock that is uneven in staple:* When we are faced with a lot of cotton containing an unusually high percentage of short stock, there is very little we can do about it to produce good work. If the rolls are set too close in an effort to take care of the short fibers, the longer stock is run through in bunches. Also, if we set to the longer stock, the short fibers are processed with very little drawing action taking place.

13. *Running a tight tension gear:* This calls for very little explanation. Anyone with roving frame experience can tell how the tension of a frame is by a casual glance as he walks through the aisles. There should be a slight slapping action on the ends as they run from the rolls to the flyer top.

14. *Insufficient humidity in the speeder room:* This causes the individual fibers to spread out, producing a roving of larger than normal diameter. The bobbin diameter increases at a greater rate than the compensating reduction of bobbin speed for each layer. The tension tightens causing stretch.

15. *Unless the correct lay gear is run on a frame,* it is impossible to secure the correct tension of a roving frame. The first layer will wind with the correct tension, but for the rest of the running of the set, the ends will run too tight or too slack, depending on whether the coils are being laid too close together or too far apart. The correct lay gear to run is one that just allows a glimpse of the bare bobbin between the coils. If the lay is too close, the roving will naturally be stretched after the first layer as the cone belt will not shift in the correct proportion to meet the increase in the bobbin diameter.

16. *Variation in the empty bobbin diameter:* Sometimes, when old bobbins are run along with new ones, we find a difference in the diameters. Of course the tension is adjusted to the preponderance of bobbins used. These in most cases are the old ones. Should the newer ones be of slightly larger diameter, naturally there will be a certain amount of stretch on these throughout the entire set.

17. *The unequal action of the horsehead motion:* This defect in construction is not found on all makes of frames, but wherever the horsehead motion is used on a frame, an unequal winding conditions prevails throughout the set. One layer of roving will be stretched somewhat, and the next will be slightly thicker than normal. The condition is most pronounced during the finishing of the lift of the bobbin. Also the greater the rise and fall of the carriage, the greater is the variation from normal conditions. In other words, the variation is much more pronounced on the slubber than it is on a jack frame.

18. *The presser leg too heavy:* The upright leg of the presser tends to fly out when the frame is up to running speed. This of course produces a pressure at the end of the presser which is a condition essential to the building of a bobbin that will be sufficiently firm to withstand handling, etc. However, if the pressure created is too great, there is bound to be too much resistance to the roving at the point where it passes under the pad of the presser. This causes stretch. Operating a frame at too high a speed also causes greater than normal pressure on the presser eye. Wrapping the roving around the presser too many turns also causes the roving to be stretched.

C. C. (MASS.)

"Wash" Comments on Fay Martin Articles

EDITOR COTTON:

In these days of general progress, rapid changes continually occur in every industry, and to keep abreast with the times, one must subscribe to a journal serving his particular industry. I think the readers of COTTON will agree with "WASH" when he states that the "HOW OTHER MEN MANAGE" department is a necessary service that all mill men require.

I have particularly in mind the several articles written by Mr. Fay H. Martin. The editor urges us to preserve all copies of these articles, which is a perfect suggestion. To my judgment, these articles will prove of great benefit to all engaged in the cotton industry and those who do preserve them will admit in the future that no textile paper ever carried a greater mission.

With the permission of the editor I am going to take some of these articles apart and give many reasons why such articles should be preserved.

Let's look up the March, 1934, issue of COTTON, page 87, where it will be found that I made the following statement, "I know Mr. Martin very well and in my judgment he is the greatest draftsman and mill engineer in the cotton industry." After reading his articles, the readers, I know, will credit me with good judgment.

Very recently I received a letter from a man at the helm of one of the leading shops building fly frames. He is also considered an authority on the subject. He states in part, referring to Mr. Martin, "He is an authority on frame builder motions, and his many years of experience have taught him the usefulness of the cone such that he has perfected a cone which has been developed to take care of all the varying conditions that exist during the winding of the roving on the bobbin." A tribute from one authority to another.

Mr. Martin has given us a cure for evils that have existed since the birth of the cotton industry. Through his articles he has proven to us all that certain laws pertaining to the winding-on of the roving have not been sufficiently investigated since the birth of the cotton industry, until he did so himself.

What he has conveyed follows:

1. In order that the velocity of every piece of a fly frame may be uniform, it is necessary that the

The articles by Mr. Martin, referred to in this discussion, are available in reprint form, at a nominal charge, so long as the supply lasts.—THE EDITOR.

MANAGEMENT TALK

Supt.: "I wish you would ask The Terrell Machine Company to send a man to see us. I believe they can save us some money."

Mgr.: "What do you want to talk to them about? We already have their machines."

Supt.: "We don't have their latest type machines. I have been talking with John Williams of Highton Mills. He tells me that they recently added one of the new Terrell Type K machines and reduced their cost $48 a week. That figures $2400 a year which he tells me represents a net annual return on the investment of almost 200%."

"Williams also told me that he is still using some helpers for handling bobbins around the machines. In the last issue of Termaco Times the Terrell Company had an article describing a Bobbin Box Hoist and a new type Conveyor which does this work very quickly and without additional labor."

"I believe these new machines and attachments will show us some big savings. I would like for you to write the Terrell Company to send a man to look over our job. They will be glad to do it without charge."

Mgr.: "I'll attend to it right now! Miss Smith, ask The Terrell Machine Company to send a man to look over our bobbin cleaning job."

The above conversation, while written in fiction style, is based upon actual facts. It is quite possible that similar savings can be made in your own mill. Why not let us investigate the possibility?

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forces acting on each piece should be always exactly balanced.

2. In order that the forces acting on each piece of a fly frame may be always exactly balanced, it is necessary that the velocity of that piece should be uniform.

Now let us turn back to Mr. Martin's article on page 77 of the November, 1934, issue of COTTON. Here Mr. Martin has made it clear to us that the presser rod must be free at all times to respond to the velocity of the spindle. He has proven also the influence the pressure of the paddle has in the true modification of the bottom cone, and with such a cone you have the cure of the so-called "racking" by the tenders. He has proven the percentage of pressure from the empty to full bobbin in such a logical way that you will find no one "from Missouri" hereafter.

Next we turn to his article on page 85 of the December, 1934, issue. Here he gives us the true meaning of centrifugal force. He frankly admits that the varying pressure cannot be overcome. So, being the draftsman and engineer that he is, he knew that he could not destroy such existing laws by tampering with the presser rod, so he turned his mind to the modification of the bottom cone to take care of the unequal conditions the forces created which are uncontrollable.

But what is gained from this article?

It is a warning to the superintendent and carder to maintain the speed at all times for which the cones are modified, and again you have the cure for "racking" by the tenders. It also gives the student a good knowledge of the functioning of the presser rod, with the result that when he attaches the presser rod to the hollow leg, he will consider the laws described by Mr. Martin and will give the presser freedom to respond to the velocity of the spindle.

To the man at the helm, it will serve as an incentive to see that all flyers are always properly balanced, and not repaired by every Tom, Dick and Harry, but sent to a proper shop.

Remember this, when the presser is not free to respond to the speed of the frame, the bobbin diameter will increase faster than on other bobbins with the result that the end will snap every little time and we have stretched roving in spots. Remember also that the strength of a warp is the weakest thread in it, so if there are a few weak threads the stoppage can be multiplied by the number of the weak threads.

Next we turn to Mr. Martin's article on page 78 of the January, 1935, issue of COTTON in which he explains "The Hyperbola Curve." Now turn to page 82 of this same issue and you will find where I state, "But there is a great deal of difference between method and problem."

So the problem is to find the exact values of the hyperbola curve. This article should be studied and mastered by all mill men. It may enable them to correct the following evils, which are going on both in England and the United States and in other countries where they have these defective fly frame cones.

Go to your library and obtain the volume entitled "Mechanics of Textile Machinery". On page 53 a test is given and the total diameters of the cones are as follows: At the start of the set, 10.38 inches, at the center 10.43 inches, and at the finish 10.4.

Now please consider this difference in the circumference of the cones and you will find it great.

Next we turn to Mr. Martin's article on page 96 of the June, 1934, issue.

In this article Mr. Martin points out the proper cone belt that should be used and also the care it should receive. By following his advice, we will prevent the cone belt from curling on the sides. As stated, the belt should be free from oil and foreign matter and a little belt dressing applied every morning in the proper way. Why? Because at the start of the set of roving, the speed of the bottom cone is higher, and the cone belt is transmitting its maximum power, although the bobbins are empty, for the reason that the cone belt has a small arc contact on the bottom cone. If the cone belt is neglected, it will increase the belt slip over 1½ per cent.

Please be reminded also that the pressure of the paddle is 12 per cent greater on the strand at the start of the set, and as the bobbin leads at all times during the winding, the cone belt must draw the strand past this great pressure which is termed the maximum load, and such existing conditions call for the service of the highest quality of belting obtainable.

We next turn to Mr. Martin's article on page 84 of the November, 1935, issue. In this article he explains tension on fly frames and we must admire him for his frankness and honesty when he states, "Just when one thinks he has 'got' it, it is not there".

If this article is properly analyzed, the reader will see clearly that to get the exact values of the hyperbola curve, the outlines of the cones must be perfect.

But it also follows that variation in speed between one frame and another will require different outlines. Again, different cottons call for a different cone. For this reason every carder should sample every bale of cotton used. Many carders have the idea that in the case of wiry stock, if no hard ends appear, everything is well. Wiry stock will increase the tension, simply because more resistance is offered to the front rolls. Such conditions are not discovered by the naked eye, or feeling by the hand. The weight of the warper beams tells the story.

Every carder should be an expert at sampling cotton and by experience he should be able to judge the proper setting between the drawing rolls for both fluffy and wiry cotton and thus keep the tension on the frames about the same at all times.

Different hanks require different cones.

It must be admitted that the closer the strand on a hard surface such as a bobbin, the more it will be flattened out than those covering the following layers. The same goes with the diameter of the strand. In proportion, a 6.00-hank roving will be condensed more than a .50-hank, not considering the great difference in the speed. By having a cone for different ranges of hanks and frames run at precisely the speed at which the cones were figured out and for which the flyers were built, a practically perfect tension is accomplished. It would be a great deal of trouble to change the cones for each hank roving, it was never done and never will be done. So, as stated by Mr.

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Martin, "The adjusting of the tension on a roving frame is a game of 'trial and error' with error following each trial more often than not".

For over 40 years I have been interested in the textile press, but in all of my experience, I am unable to recall any articles which equal the instruction given in these articles by Mr. Martin, and I think they should be greatly valued and preserved by all.

In closing, I hope no one will accuse me of patting myself on the back unduly in writing these comments. My mind doesn't run that way, for after all of these years I realize that success consists not so much in getting the praise of others as in securing the approval of one's innermost self.

As for the "HOW OTHER MEN MANAGE" department, I have always pictured it as a little family where there is a competition of ideas that works out to our mutual benefit.

WASH (R. I.)

Another Yank Tells How to Train Loom Fixers

If you can afford to spend a little money, here's a way to get some jam-up loom fixers. This New Englander has walked the ropes—and you loom fixers, read this and see what a mill man thinks of your job . . . . . .

EDITOR COTTON:

In reply to "CONTRIBUTOR NO. 6435", I would say that the way of properly training men to become loom fixers is of vital importance and more so today than it has been for a long time; especially up here in New England. There was time when there was an abundance of highly skilled loom fixers to draw from—even the most intelligent and skilled fixers were walking from mill to mill looking for jobs. Mills that were running part time absorbed some of these men but others could not be placed. The ones who were not able to get jobs as fixers accepted positions in other professions, bought farms or secured other means of making a living. Many of these can never be induced to enter the mills where the work is not steady—thus there is a lack of skilled loom fixers in some of the textile centers throughout the country.

We have delayed the training of men for loom fixing so long that if a sudden boom in the textile industry should happen, we would be in a serious situation in getting good fixers.

As to the present method of training new loom fixers, there is no standard practice and each mill has its own way to train men for this job. The methods vary from the sending of men to textile schools to the placing of a weaver on the warping job so that he may pick up anything he can about loom fixing.

I am not in a position to know how other mills go about training new loom fixers but I do know they train the fixers in many different ways.

My own suggestions for training new men to become loom fixers are as follows:

First find a room suitable for a class room and put a loom without a warp in it. Naturally it is best to have the same type loom as used in the mill. Then inquire among the best and most intelligent weavers as to who would like to learn loom fixing. The ones wanting to learn fixing would then be given an educational test and those making the highest grades accepted for the class.

Now the most difficult problem arises—that of choosing an efficient teacher. This man would have to be theoretical as well as practical and must also be able to get his ideas over to the students. If such a man is not to be had in the plant, I suggest that one be secured from the outside even if several small mills have to go together to defray the expenses. Success or failure of the school rests with the instructor.

The loom or looms in the class room should then be dismantled by the student under the supervision of the teacher. Every dismantled part should be closely examined for excessive wear and the student told the effect on the running of the loom of the worn parts. After the loom has been torn down, the worn-out parts should be replaced and the loom built again by the students under the supervision of the instructor. The loom should be assembled step by step and the function of each motion and part explained by the instructor while the loom is in a condition to be viewed. After the practical class, the students should write notes on their observations. All during the dismantling and building of the loom, the students should be getting instructions in the proper use of tools, advantages of using hexagon nuts, the use of lock washers, etc.

As the loom is assembled, the parts should be put in place properly, the loom leveled, lined, and correctly timed.

Settings and Timings are Important

In the setting and timing of the various loom motions, the student should have all this explained individually—and a reason should be given to him for each item explained. As the settings and timings are important, the instructor should make certain that the student gets them right before advancing. The class should not progress so rapidly that the students only get instructions haphazardly.

As stated before, the same type loom as used in the mill should be studied. Now if a dobby loom is to be used in the class, it could be mounted on a stand on casters so as to be swung around to any convenient position. Then a hand driven arrangement could be applied to the dobby so that the same motion would be given it as if in actual operation; the jacks could be made to work with weights or small springs.

Now the students should dismantle this dobby, leaving only the frame, and examine the worn parts as they are removed. Here again the worn parts should be replaced and the dobby rebuilt.

In no case should the student be instructed in any motion that is not used in the mill. This may sound narrow minded but don't forget that the class in loom fixing will cost the mill quite a sum of money and it is therefore the privilege of the mill to teach only those subjects which are of advantage to the mill. Then the students would tend to become useful fixers in the mill quicker and would not be as likely to leave the mill to get a job somewhere else where other type looms are used.

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To become an expert loom fixer it is necessary to know the fundamentals of designing (except in a plain mill). Therefore the students should be given instructions in designing along with their mechanical instruction. If a loom fixer understands the fundamentals of designing he can quickly determine which harness causes mis-picks and whether the harness has remained down when it should have lifted.

Getting back to the class room, as soon as the loom is reassembled and in perfect mechanical condition, it should be run with a reed and shuttle in it. The student could then watch the loom in motion, ask questions and receive instructions on parts that he does not understand. The instructor could let each student explain the motions to him and in this way find just what the student does not understand.

It is also profitable to instruct the students in figuring picks per inch given by the take-up combination, the per cent production, yards produced, and calculations for reed number.

When the students thoroughly understand the mechanical working, setting and timing of the loom motions, a warp may be tied-in and instruction given in the setting of harness.

After this, the students would be ready to do some actual loom fixing in the weave room, either changing over looms or running small sections. While the students are learning they should not be permitted to do any loom fixing in the weave room as they might pick up the wrong way of doing things.

Now the question may be asked as to why a mill should have to go to all this expense to get trained fixers. The answer is there is no other job in a textile mill that requires such skill as loom fixing. Where the new high speed looms are used, the question of loom fixing becomes extremely important; often it is the skill of the loom fixers that stands between success and failure of the mill.

A mill may claim it does not pay for learning but it does although it may not always be seen. It is better to pay out a round sum in a few months and in return receive the services of some good loom fixers than to pay out this sum many times over during a period and perhaps never get a good loom fixer.

When a mill spends a lot of money to develop expert loom fixers, it should be done in such a way that the mill may call on these fixers for advancements later on.

I. M. (MASS.)

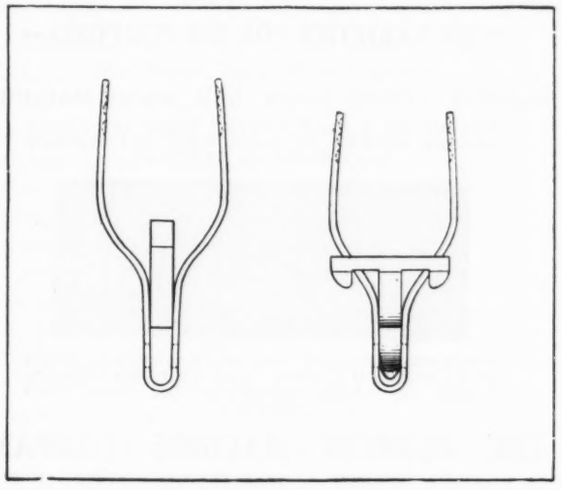
Shuttle Spring Causes Filling to Break

This discussion by a loom fixer will bear thought. We are always glad to have letters from you fixers. What do you think of this subject? . . .

EDITOR COTTON:

On page 102 of the March issue of COTTON I notice that "CONTRIBUTOR No. 6456" is having trouble with the filling breaking on the change and that he is using a cast iron shuttle eye.

I am a loom fixer and my shuttles have cast iron shuttle eyes but I don't believe that the trouble comes from this. I believe that most of our filling breaking on the change is due to the shuttle spring we are using.



The shuttle spring on the left has more leverage and permits the nose of the bobbin to move . .

There are two types of shuttle springs being used at the present, one a long one and the other a short one. The distance of the hole for the shuttle spring screw is the same on both springs but the length of the spring in one case is about 5/16-inch longer than the other. (See illustration.)

Thus more leverage is on the long spring which will allow the tip of the bobbin to snap up or down on the change more than when the short spring is used. Also the long spring does not have the thickness in the metal that the short one does which also gives it more chance to bend lengthwise.

We have more trouble with the long spring causing the filling to break than we do with the short spring.

Of course, there are other causes for the filling to break on the change, but I am passing this along to "CONTRIBUTOR NO. 6456" so that he can check up and see what type spring he is using in his shuttles. I hope this will be some help to him.

CONTRIBUTOR NO. 6482

Coleman pH Electrometer

Wilkens-Anderson Company, 111 North Canal St., Chicago, Ill., published in a recent issue of their house organ, *Waco Catalyst*, a description of their pH electrometer. It is explained that pH work has usually been taken care of by a specially trained chemist or technician but that the Coleman electrometer is simple enough so that the foreman may operate it accurately. In bleaching, only the glass electrode pH apparatus may be used because of the chlorine gas present. The Coleman is suited for this because of the sealed electrodes. The average dyer, it is pointed out, may also use the instrument for his work.

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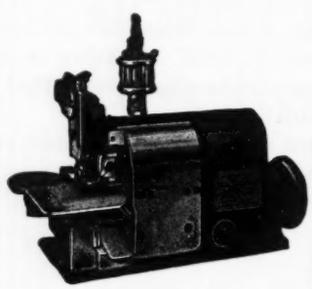

HIGH SPEED TRIMMING AND OVERSEAMING OVEREDGING AND SHELL STITCH MACHINES

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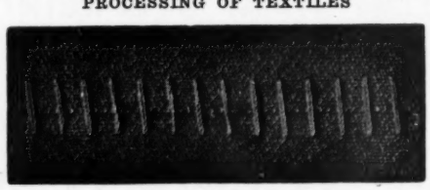

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Southern Representatives:

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R. B. Moreland, P. O. Box 895, Atlanta, Ga.

"Young-Timer" Re-Joins Our Network

This contributor offers here some thoughts that may cause you to analyze some of your conditions more closely . . . . . .

EDITOR COTTON:

I guess you will be surprised to hear from me again, but I have been so busy trying to run my job during the past two years that I have not had time to write.

I have found a breathing spell, so I thought I would pass along to you some information that I have uncovered. Possibly everyone else knows it, but I have just found it out in the past few years, so here goes:

Many mills are continually doing some form of research work, making tests for ends down per 1,000 spindles per hour, stops per loom per hour, etc. They gain some valuable information from this work, but if they would go a little further they could make their tests more complete. Here is the idea:

Do you know that from 20 to 30 per cent of the machinery in any mill is the cause of from 70 to 80 per cent of the bad running work? In other words, in the weave room, 20 to 30 per cent of the looms in that particular room cause from 70 to 80 per cent of the total loom stoppage.

If anyone does not believe this, I suggest that he make a test in his weave room and find out for his own benefit. Put a tag on each loom with the loom number on it, then for a period of 8 hours or longer, let the weavers put up the stoppage of each loom on each individual card, and at the end of the given time take up the cards and total up the stops and it will be found that what I have stated is true.

Go to the spinning room and give one of the spinners a piece of chalk. Tell her to mark on the top clearer board above each individual spindle every time an end comes down. After a certain period of time, go around and check up on the marks and it will be found that on any of the frames 20 to 30 per cent of the spindles on that frame are causing from 70 to 80 per cent of the spinner's work.

This is true on any or all of the machines in the mill. So you can see how much may be accomplished by carrying out such further tests.

In other words, a man could carry out these tests in each department, periodically finding out which machines are giving the most trouble, and by overhauling these particular machines, cut out the unnecessary bad work, improve the quality of the material, and secure better running work with lower supply cost.

Of course we will never eliminate all of our troubles but by making these tests we can always keep our fingers on the job and know just exactly what is going on in each department.

We should have a system of running the job and keeping records like OLD-TIMER recommends, and if we will do this, I guarantee that we will always be ahead of our jobs instead of our jobs being ahead of us.

YOUNG-TIMER

Can a 6 inch Belt Be Laced with Two Belt Hooks ?

If it could actually be done you would welcome the system, wouldn't you?

In effect, it can be done. If you will write for the answer we will include with it a useful

NOVELTY NOTE BOOK

With Our Compliments

It would be appreciated if your request for the answer included the name of the Mill Supply Distributor from whom you purchase Belt Hooks.

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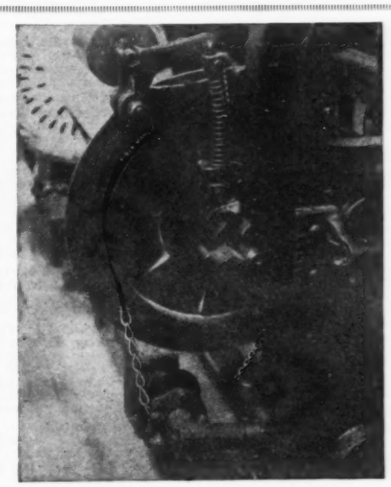
. . . Today's Standard . . .

SAFETY BELT LACER CO.
FACTORIES BUILDING TOLEDO, OHIO



The Perfect Let-Off

Why put up with the antiquated chain or rope methods of let-off, with their expensive and messy use of graphite or oil which cause seconds? Many mills have modernized at this point with the

F-M-C ASBESTOS FRICTION LOOM LET-OFF

Patent 2037189

which runs smooth and assures an even let-off, improves quality of cloth, reduces seconds, lasts longer than old style frictions, requires no oil or graphite, is not affected by climatic or humidity conditions, eliminates bad start-ups, does not score or wear beam drums and is much more economical per yard of cloth produced. It comes complete, ready for attachment.

Full information and prices sent gladly on request. Write us today.

F-M-C Asbestos Brake Tape for loom brakes, ribbon and silver lappers, extractors, warpers and under picker-head blocks. Last longer than cork, leather or other types of brakes. Not affected by oil, grease or humidity. Write for sample.

F-M-C Asbestos Even Tension Slasher Cord is another product that will save you money. Made in ¼", 5/16" and ⅜" diameters. Write for sample.

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This service is for men engaged in textile manufacturing only. Requests received from those not in the industry cannot be handled.

Advertisers in this Issue Offer You . . . . . .

200. New American Speed Set Gear Construction Numbering Machines—10 page illustrated booklet giving full information and details on special numbering machines designed for cotton, woolen, hosiery, knit goods and finishers of textile goods and others. If your tags, tickets and labels use style, piece, case and lot numbers, yardage length, etc., these new machines will solve your numbering problem. American Numbering Machine Co., Shepherd and Atlantic Aves., Brooklyn, N. Y.

204. Modern Shipping Boxes — Illustrating the modern tendency in interior construction and exterior design, this booklet shows how shipping boxes can be made outwardly colorful and attractive. Hinde & Dauch Paper Co., Sandusky, Ohio.

205. The Walker Method—8 page illustrated catalog describing the Walker method of quickly checking the efficiency of machinery. This improved method eliminates the losses resulting from improperly adjusted equipment. Walker Electrical Company, 926 Means St., Atlanta, Ga.

206. Moccasin Wall Card—Attractive, convenient new wall card listing over 500 plain finished bronze bushings in stock for immediate shipment. Also over 200 cored and solid bars made to S. A. E. 64 specification. Every mill should have one of these for handy reference. Moccasin Bushing Co., Chestnut St., Chattanooga, Tenn.

207. Reworking Spinning and Twister Rings—folder describing Gossett's patented method of reworking spinning and twister rings, making old, worn and discarded rings like new. Gossett Machine Works, Inc., Gastonia, N. C.

208. Cool Your Mill With Its Own Heat!—a ten page booklet which tells the story of the Parks Automatic Airchanger—a patented combination of forced air-change and direct humidification in balance—all under control of automatic humidity regulators. **Ask for Bulletin 1135.** Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

209. Are You Being Kidded About Automatic Humidity Regulation—a direct comparison of the sensitivity, accuracy and reliability of a hygroscopic type of humidity regulator and the Park Spray Psychrostat—the first and only regulator to work on the psychrometric principle. Ask for Bulletin 835. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

210. Stretch Out Goodwill!—Let spinners spin and Parks Automatic Traveling Cleaners do the cleaning, mechanically, regularly. Eliminates slugs, gouts, bunches; greatly reduces breakage, loom stoppage, seconds; improves production in quality and quantity. Ask for Bulletin 236. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

213. Saco-Lowell Cotton Machinery—Twisting—a 36 page illustrated brochure explaining the company's twisters and parts, including the four basic type twisters, features of new construction and general notes on twisting. Production calculations and specifications are included. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

214. Saco-Lowell Cotton Machinery—Spinning—the second edition of a 56 page booklet, illustrated with the company's product and containing valuable charts, production tables and other spinning data. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

215. What Happens When You Ship a Package?—16 page illustrated booklet outlining the particular value of railway express and air express service and giving all details concerning pick-up, transportation and delivery. Railway Express Agency, Inc., 230 Park Ave., New York, N. Y.

216. Cutting Costs with Liquid Caustic Soda—a 72 page hand book, packed full of useful information on liquid caustic soda, including unloading and handling, properties of caustic soda and its equeous solutions, sampling and analysis. Of practical value to executives, buyers, chemists and operating men. Sent without obligation by writing on your business letterhead to the Mathieson Alkali Works, 60 East 42nd St., New York, N. Y.

217. Diamond Fibre Hollow Ware—32 page booklet and catalog, attractively illustrated, showing various types of boxes, trucks, cans, barrels, baskets and trays of Diamond Fibre Hollow Ware. Of interest to every mill man in solving material handling problems. Free on request. Continental Diamond Fibre Co., Dept. C, Wilmington, Delaware.

218. Butterworth Electric Guiders—6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider and is unexcelled for fast, accurate guiding. H. W. Butterworth & Sons Co., Philadelphia, Pa.

219. My Strap-Book by Doc Steelstrap—16 page illustrated catalog describing the hundreds of ways that Acme steel strap can be used to advantage in connection with paper boxes and wraps in making safe, economical shipping packages. The strap-book will convince you that Doc Steelstrap and his assistants do a thorough job of the packing and shipping business. Acme Steel Co., Chicago, Ill.

220. The American Monotractor—24-page booklet illustrating electric drives for cranes, hoists and carriers on MonoRail conveying systems. This book outlines some of the control features that make possible complete and semi-automatic transportation of heavy loads from process to process, building to building. The American MonoRail Co., Cleveland, Ohio.

221. A New Overhead Automatic Cleaner — Folder showing the new American MonoRail automatic cleaner in operation on MonoRail track circuit over spinning, warping, winding, twisting, etc. This cleaner incorporates a new scientifically designed blower producing a whirling column of air directed and controlled so that it prevents accumulation of fly with no harm to roving. The American MonoRail Co., Cleveland, Ohio.

222. "Onyx Processing and Finishing Compounds"—A new 56 page catalog describing the entire line of processing and finishing compounds and covering every process on all types of fabrics. Also included is a comprehensive article on the subject, "The Importance of Accurate pH Control." Onyx Oil and Chemical Company, 15 Exchange Place, Jersey City, New Jersey.

223. Alloyed Iron in Southern Industrial Fields—16 page illustrated catalog dealing with the properties available in modern cast irons. International Nickel Co., 67 Wall St., New York, N. Y.

224. "Tank Talk"—Sixteen page booklet of illustrations showing various types of elevated steel tanks, constructed and erected by manufacturers, as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said. R. D. Cole Manufacturing Company, Newnan, Georgia.

225. Houghto-Size AC — showing characteristics a warp sizing compound must have for modern rayon fabrics, weakness of former sizes and the unusual advantages of Houghto-Size AC. E. F. Houghton & Co., 240 West Somerset St., Philadelphia, Pa.

226. Stainless and Heat Resisting Castings—folder illustrating and describing stainless steel castings for corrosion and heat resistance, and listing the various alloy castings available and their properties. The Cooper Alloy Foundry Co., 150 Broadway, Elizabeth, N. J.

227. Stainless Steel Valves and Pipe Fittings—complete illustrated catalog, together with price list, covering stainless steel valves and pipe fittings, giving all dimensional data, etc. The Cooper Alloy Foundry Co., 150 Broadway, Elizabeth, N. J.

11. Whitinsville Rings—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein, Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

25. "Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machines with general information on subject of full fashioned knitting.)

55. Interpretation of Analysis for the Layman—An eight page booklet explaining what the various items used in fatty oil and sulfonated oil analysis mean, enabling the ordinary textile man without chemical education to interpret the various chemical analyses. National Oil Products Co., Harrison, N. J.

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. Efficiency and Performance of SKF Roller Bearing Spindles—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

65. Bulletin No. 500, Cooper-Hewitt Industrial Illumination—booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Electric Vapor Lamp Co., Hoboken, N. J.

66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

69. Monel Metal Equipment for the Textile Industry—A 50 page buyers' guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

70. Fafnir Ball Bearings for One Process Pickers—outlining the advantages of ball bearings in guaranteeing smooth, accurate motion, particularly on evenners, as well as uninterrupted production, ease of operation and cleanliness of bearing units throughout the one-process pickers. Fafnir Bearing Company, New Britain, Conn.

72. The Merrow Butted Seam—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

94. New Development by Onyx—Eight page booklet describing and giving uses of new developments in sulphonated aliphatic compounds . . . called Aliphatic Ester Sulphate and Glyceryl Sulphates. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

102. White and Light Shade Cotton Fabrics Dyeing and Finishing. National Oil Products Co., Harrison, N. J.

103. Throwing Rayon Crepe. National Oil Products Co., Harrison, N. J.

104. Warp Sizing. National Oil Products Co., Harrison, N. J.

105. Mildew Prevention. National Oil Products Co., Harrison, N. J.

106. Cotton System Warp Sizing on Multiple Cylinder Machines—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk.—Charles B. Johnson, Paterson, N. J.

107. Complete Information on Alemite Lubrication. Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

109. Some Properties of Starch and Dextrine—Explaining certain fundamental properties of starch and its derivatives and their action when heated and agitated. Stein, Hall & Co., Inc., 285 Madison Ave., New York City, N. Y.

110. 3-in-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., 1934 Dana St., Cincinnati, Ohio.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch, and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

119. The World's Finest Sewing Machines—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

122. Water Filters and Filtration Equipment—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese, from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York, N. Y.

124. New Condensed Catalog on Ball Bearings and Power Transmission Units—Combines all of the information and the industrial uses of radial ball bearings as well as the Fafnir power transmission line of wide inner ring and ball bearings. It gives complete information, interchangeability tables, dimensions, prices, etc. Fafnir Bearing Company, New Britain, Conn.

CONTINUED ON PAGE 108

New Plant of Carolina Aniline & Extract Company at Charlotte

Exterior view and part of interior of new plant at Charlotte

THE Carolina Aniline & Extract Company, Inc., 2316 South Boulevard, Charlotte, N. C., have just completed the construction of a new plant, of all steel and asbestos, together with laboratories and offices. The plant was built particularly for the manufacture of all types of sulphonated oils, titanium products and finishing compounds for the southern textile trade.

Asbestos was used throughout because of flexibility, heat and cold insulation, and protection from fire hazards; the plant being constructed on the Ambler Olsen system and designed especially for sulphonating during extremely hot weather. The company states that this is the first complete plant and offices, of this construction, erected in the United States.

The company was incorporated in July, 1934, and this is the first unit of an expansion program. The plant is situated on one of the main streets of Charlotte, with railroad siding, on a plat of 2⅓ acres, affording sufficient ground for six similar units should they be required in the future. G. S. McCarty is president of the company, and W. W. Ray is secretary and treasurer.

Annual Outing of Southern Sections at AATCC

THE Piedmont, Southeastern and South Central sections of the American Association of Textile Chemists and Colorists held their annual joint outing on August 14 and 15 at the Signal Mountain Hotel with an attendance of approximately 150, including mill executives, dyers and chemists and sales representatives of allied concerns.

The gathering was entirely devoted to entertainment. Walter E. Hadley, Standard-Coosa-Thatcher Co., chairman of the South Central section, was the official host, and Robert S. Wheeler, superintendent, Crystal Springs Bleachery, and Robert Cowan of Industrial Colloids and Chemicals, Inc., were in charge of the meeting.

The festivities started Friday afternoon with beer and pretzels in the sunken garden of the hotel, followed by a lawn concert, and swimming and diving contests in the outdoor pool. The guests were entertained at a dance in the hotel hangar on Friday night.

Saturday's program included games and contests in the morning for both men and women with handsome prizes going to the winners. The men's golf tournament was held in the afternoon at the Signal Mountain course with approximately 50 players taking part. First prize for the low gross score went to R. R. Dorsett of Charlotte, N. C. First prize for low net score was tied for by four players. A skeet shoot was held at Dayton, Tenn., Saturday afternoon, the first prize going to H. O. Shuptrine of Chattanooga, Tenn.

The outing was concluded with a banquet on Saturday night which was featured by a lottery drawing and the presentation of prizes. A. R. Thompson, Jr., of Charlotte, N. C., acted as master of ceremonies.

The following concerns contributed toward making the meeting a success: Industrial Dyestuff Company; E. I. duPont de Nemours & Co., Inc.; Onyx Oil & Chemical Co.; American Cyanamid & Chemical Corp.; Nyanza Color & Chemical Co., Inc.; Wallerstein & Co., Inc.; Geigy Co., Inc.; Kali Manufacturing Co.; Arnold, Hoffman & Co.; Royce Chemical Co.; American Dyestuff Reporter; National Oil Products Co.; Sandoz Chemical Works; General Dyestuff Corp.

Prizes given in the various events at the outing and their donors are listed below:

Onyx Oil & Chemical Co., bottle, glasses, clock, brushes, 2 ashtrays; Surpass Chemical Co., one golf bag; Rohm & Haas Co., one clothes bag; Davenport Hosiery Mills, Inc., three pairs hose; Laurel Soap Mfg. Co., Inc., one syphon; The Calco Chemical Co., Inc., one syphon; Bryan Hosiery Mill, Inc., three pairs hose; Arkansas Co., Inc., deep sea treasure; N. Y. and N. J. Lubricant Co., Non-Fluid Oil; Burkart-Schier Chemical Co., one dozen golf balls; International Nickel Co., Inc., Monel metal smoke tower; Colgate-Palmolive-Peet Co., two toilet requisites; Frank G. North, Inc., one pair pillow slips, one pair sheets; Jacques Wolf & Co., one bottle soapless shampoo; COTTON, one dozen golf balls, 3 golf club covers, one golfer's raincoat; Hercules Powder Co., one dozen golf balls; American Aniline Products, Inc., one book; Solvay Sales Co., one Cash-In putter; Scholler Brothers, one golf bag; Quaker City Chemical Co., one dozen golf balls, one polo shirt, 3 pairs hose; Ciba Company, Inc., one desk set; Warwick Chemical Co., one lady's umbrella, ½ dozen golf balls; Celanese Corp., 1 coffee set; Nova Chemical Corp., 1 syphon; Manufacturers Soap & Chemical Co., golf prize (value $10.00); Magnet Mills, Inc., 3 pairs hose; H. A. Metz Co., mirror and bowl.

Shipments in July Reduce Surplus Rayon Stocks

A new high record shipments of non-acetate rayon yarn during July resulted in a further reduction of surplus stocks in the hands of producers to the lowest level in six years, or since records were first compiled, according to the current issue of the *Rayon Organon*, published by the Textile Economics Bureau, Inc. Acording to the *Organon*, the daily rate of non-acetate rayon yarn deliveries to domestic mills in July was at record-breaking proportions. Because of the continued high shipments of non-acetate rayon yarn during July, stocks in the hands of producers on July 31 showed a further decline, being equal on that date to an 0.7 month's supply. This total, it is stated, represents actual stocks on hand, and does not represent unsold stocks only.

HELPFUL BOOKLETS FREE...

Continued from Page 106

127. Vim Short-Center Drive with Vim Tred Leather Belting.—16 page booklet outlining the special requirements of belts for short-center drives and the proper adjustment to give the highest efficiency. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

128. Houghton's Hand Book for the Hosiery Dyer—This book contains the result of 69 years of experience in research and development of processing materials for the textile industries, together with a wealth of other data useful to every hosiery dyer. E. F. Houghton & Co., 240 West Somerset St., Philadelphia, Pa.

130. Three New Textile Scouring Agents—This 32-page book gives many valuable formulas for the use of Houghton's Wonder Powder—a new type of colloidal detergent—in fulling, scouring and finishing nearly all types of woven and knit goods. Also contains several pages of valuable reference and conversion tables. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

131. Houghton's Leathers for the Textile Industry—This valuable handbook contains 88 pages of data on the proper selection and application of all types of textile leathers, including belting, special spindle belts, round leather belts, loom leathers, mill strapping, leather aprons, etc.—E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

134. STA-PUT Lubricants—A brief description of an entirely new type of tough film lubricants which not only gives greater protection to bearings but eliminates oil drip and reduces lubrication costs. STA-PUT Lubricants are made in grades to suit all types of textile machinery. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

135. The Pick Method of Weaver Wage Payment—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wis.

139. Textile Detergents—Theory of the use of alkalis and control of pH.—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergents in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

140. Textile Machinery—Improvements in Design and Methods of Lubrication. A discussion of the problem of lubrication of textile equipment covering operating conditions and factors affecting and affected by lubrication. Card Room Operations, Twisting and Spinning Machines, Silk Throwing, Looms, Knitting Machines, etc., covered. Available in copy of June 1934 issue of "Lubrication." The Texas Company, 135 E. 42nd St., New York City.

141—V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-Belt drive design of special V-Belt drives, numerous standard tables, charts and belt and sheave list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

143. Winders and Winding—Describing the various processes in the preparation of cotton, woolen and silk yarn and illustrating and describing the different types of Universal winders and the various attachments to suit the particular winding requirements of the various branches of the textile industry. Universal Winding Co., 95 South St., Boston, Mass.

147. Let's "CAN" The Oil Can—describing permanently sealed bearings for life, and for higher speeds and temperatures single seal ball bearings which have to be lubricated only from one to three years. New Departure Mfg. Co., Bristol, Conn.

150. Engineering Data Book on Mechanical Rubber Goods—21 pages of useful information and engineering data, designed to simplify the selection of belting, hose and other mechanical rubber goods for industrial service, including a review of belting requisites for a wide variety of uses as well as helpful tips on installation procedure. B. F. Goodrich Co., Mechanical Division, Akron, Ohio.

152—Plant Checkup List—Crane Co., 836 South Michigan Ave., Chicago, Ill.

154—Johnson Bronze Bulletin No. 340—showing over 600 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1274 on the P.I.V. Gear—giving details of this positive variable speed control. Link-Belt Co., 910 South Michigan Ave., Chicago, Illinois.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drives. Link-Belt Co., 910 South Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers Association, 1794 McCormick Bldg., Chicago, Ill

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, 95 South St., Boston, Mass.

164. Johnson Rotary Pressure Joints—Bulletin describing this rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

165. New Departure Speed Power Unit—Bulletin giving details of this compact, self-contained driver that gives a thousand different speeds at a turn of the wrist. New Departure Manufacturing Company, Bristol, Conn.

166. Better Cones The World Over—Bulletin describing the Universal No. 50 Winder for silk and rayon. Universal Winding Company, 95 South Street, Boston, Massachusetts.

168—The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

169. Tube-Tex High Speed Steamer and Finisher—Describing these new steaming and finishing machines for tubular knitted fabrics, which handle cotton, rayons, woolens and mixtures at speeds up to 45 yds. per minute, being unique in that patterns, designs and stripes are furnished straight and free from any distortions. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—Showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-Belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including: bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

177. New Advances in Loom Equipment—12-page booklet describing discoveries and advances which loom manufacturers have made in keeping pace with these discoveries down to the present time—non-technical informative, amply illustrated. Emmons Loom Harness Co., Lawrence, Mass.

179. Improved Airplane Propeller Exhaust Fans and Ventilating Equipment—a 40-page catalog showing the important factors to be considered in a propeller type fan to secure the greatest efficiency, with data and tables showing fan capacity and details of each type and size of fan and views of typical installations. Propellair, Inc., Springfield, Ohio.

180. These Extra Cushion Cork Cots Offer Six New Advantages—a 6-page folder which tells the story of the new Armstrong's Extra Cushion Seamless Cork Cot from the viewpoint of the mill man. The folder describes HOW the new cot is of advantage to mills spinning cotton yarn; WHY it is better, and something about its method of manufacture, and also gives PROOF in the form of some tests that have been made with this new roll covering material. Armstrong Cork Products Co., Textile Division, 930 Arch St., Lancaster, Pa.

183. Schieren-izing—describing leather belt manufacture from the selection of hides through the various processes to the final tests, also showing illustrations of belts with unusually long service lives. Chas. A. Schieren Co., 31 Ferry St., New York, N. Y.

184. Speed Control Handbook T-35—new reference book on variable speed control, said to be the most complete and helpful book on this subject ever published, 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind

185. Dulux—The White Finish that Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washings. E. I. duPont de Nemours & Co., Finishes Division, Wilmington, Del.

186. F-7 Feeder Bulletin — Describing the better blending that is secured and the important cleaning operation that is added by using F-7 feeders in place of bale breakers. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

187. The Wildman Single Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full Fashioned Division, Norristown, Pa.

188. Form 374—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 No. Franklin St., Chicago, Ill.

190. Warp Conditioning Units for Synthetic Yarn Slasher—booklet giving full details will be sent free to mill men who write on their company letterhead. Chas. B. Johnson Co., Paterson, N. J.

191. The Bahnson Humiduct—bulletin describing Bahnson Humiduct system which combines humidifying, heating, ventilating and air conditioning all in one unit, will be sent free on request. The Bahnson Co., Winston-Salem, N. C.

192. Wood Tanks for Every Purpose—100 page illustrated catalog showing the advantages and lasting qualities of wooden tanks. Rubber-lined tanks for dyeing and other uses in the mill are illustrated and discussed in detail. Hauser-Stander Tank Co., Ammen Ave. and Spring Grove Ave., Cincinnati, Ohio.

193. Short Cuts to Power Transmission—72 page illustrated booklet containing all information needed in solving any ordinary belt transmission problem, informative material on belt joints and transmission practice and a quantity of useful tables and data. Flexible Steel Lacing Co., 4607 Lexington St., Chicago, Ill.

194. Accurately Checking Spindle Speed—A three page booklet describing the Strobotac, a tachometer operating on an entirely new principle for observing and measuring spindle speeds anywhere between 600 and 14,000 rpm. General Radio Co., 30 State St., Cambridge, Mass.

195. Never Buy Sponges in the Rain—Booklet outlining the importance of knowing the percentage of moisture in a given textile in the buying and selling of the same and in connection with the working of textile fibres in the process of manufacturing the goods, also showing different types of conditioning ovens for determining moisture content. Emerson Apparatus Co., 174 Tremont St., Melrose, Mass.

196. Economy of Diesel Engine Power—Bulletin No. 3030, 44 pages, illustrated, giving advantages of diesel power in industrial plants. Fairbanks, Morse & Co., Chicago, Ill.

197. Extra Life for Chain Link Fence—A folder telling about Bethanized Wire and explaining its advantages for mill and factory protection. Anchor Post Fence Co., Eastern Ave. and Kane St., Baltimore, Md.

198. The Perfect Loom Let-Off—Folder pointing out the advantages of the new asbestos friction loom let-off and giving specifications and price list. Fiber Mfg. Co., Newton, N. C.

COTTON, Grant Bldg., Atlanta, Ga.

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To the Automatic Double Tuck Machine—with its dial needles—has been added an extra range-widening feature—needle selection *in the cylinder*. This feature makes it possible to float yarns over any selected group of cylinder needles, and by the use of different colored yarns, produce vertical stripes in colors. Thus, a *still wider* range of patterns can be attained on this machine, which has already established so enviable a reputation for speed, efficiency and versatility!

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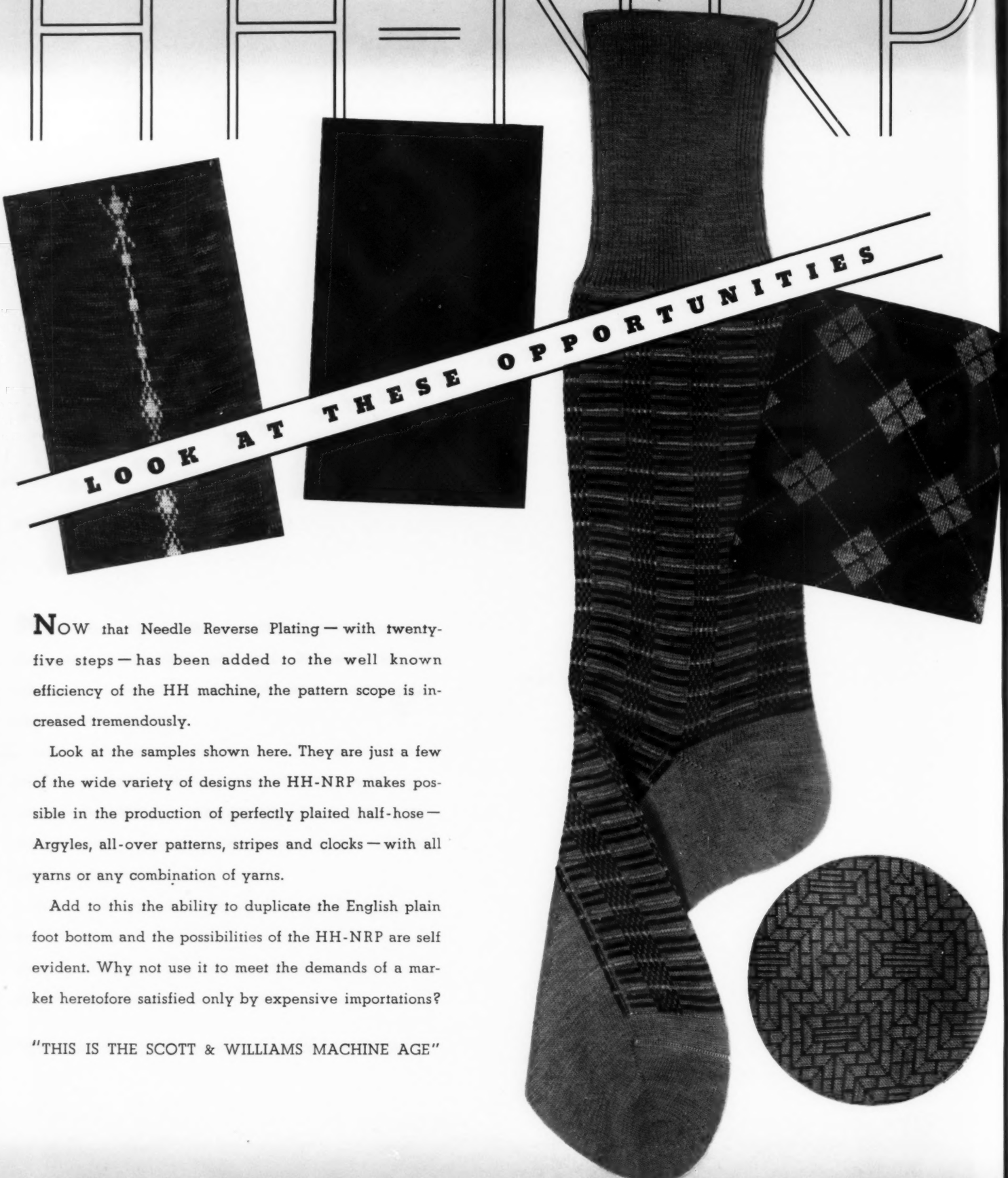
All the fabrics shown here can be produced on the Double Butt Tuck & Float Machine.

HH—NRP



NOW that Needle Reverse Plating — with twenty-five steps — has been added to the well known efficiency of the HH machine, the pattern scope is increased tremendously.

Look at the samples shown here. They are just a few of the wide variety of designs the HH-NRP makes possible in the production of perfectly plaited half-hose — Argyles, all-over patterns, stripes and clocks — with all yarns or any combination of yarns.

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KNITTING SECTION

Elastic Yarns Continue to Extend Their Uses in Textile Products

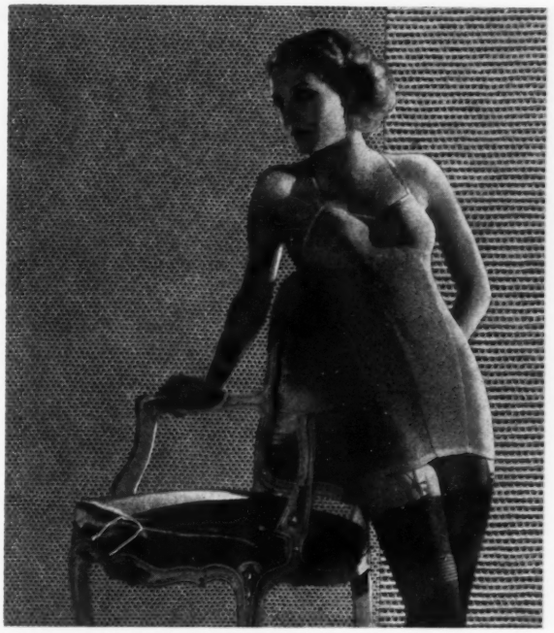
THE USE of elastic yarns in the manufacture of textiles, while a recent development, has expanded to such a marked degree in a comparatively brief period that such yarns have become an integral part of the industry. Intended to improve many former varieties of textiles, the use of elastic yarns has created new trends in the industry. Women's knee-length hosiery and men's garterless socks are examples of the latter developments while in underwear the use of these yarns in such garments as the men's athletic shorts has greatly widened the popularity of such lines.

Elastic yarns may be used in either woven or knitted goods and in making cotton, woolen, silk or rayon articles, imparting to the garments a stretch that may run one way or two as desired, creating apparel effects that stretch to fit the body. One concern sells its elastic yarn under the registered name "Lastex" which is the name of the yarn rather than of a garment or of a fabric or of a weave or the trade-mark of a manufacturer.

It is made by covering a round, spun, chemically compounded core with silk, cotton, wool or other textile fiber. The resulting yarns are then woven or knitted into fabrics with or without the use of other yarns of the same character. Such fabrics are then used with or without other fabrics to make up the wanted garment. The makers of this yarn emphasize that this stretch does not deteriorate with age or use and "will always outlast the garment."

Although elastic yarns are used in a wide variety of sections of the textile industry it has had two of its most significant effects in the hosiery, underwear, bathing-suit and foundation manufacturing branches of the industry. In hosiery, world prominence has come from the widening popularity of knee-length hosiery for women and garterless hose for men which have been made possible in both cases by the perfection of elastic yarns that are knit into the hose the same as the ordinary types of yarn and do not change the appearance of the fabric, the yarns not changing their reaction to dyeing, washing, laundering, cleaning, pressing, ironing, mending or other forms of usage.

It is stated that elastic yarn is being used today by "every important corset manufacturer in America." At the same time strides have also been evident in its use in bathing-suits, where the popularity of figure-fitting garments has widened so extensively



Courtesy, Circe Foundations, and Adamson Bros. Co., Inc.

Foundation garment of cotton-Lastex mesh, posed against a background of two weights of mesh . . . . . .

in recent years. The use of a certain percentage of elastic yarns in the manufacture of these garments gives them this quality in parts where needed.

Makers of the yarn stress that its use in such garments not only imparts the elastic feature but at the same time adds to the fit comfort and wearing qualities as well. It has been a factor in bringing the jockey short type of underwear into wide use during the last couple of years and is being used also in many other varieties of undergarments for men, women and children.

As another example of what uses this relatively new type yarn will accomplish is in backs for men's vests. Vest backs for all types of suits, business, dress and sport are stressed, the stretch doing away with the old-fashioned strap and buckle and the wrinkles there.

Introduction of this yarn into the textile industry on a broad scale has had the usual ramifications. Not all hosiery manufacturers look upon the development of knee-length goods for women with favor, pointing out that the shorter leg means less knitting

Of course, there's a DIFFERENCE

AND IT EXPLAINS THE PROCTOR & SCHWARTZ BOARDING MACHINE'S SUPERIORITY

VARIOUS METHODS FOR THE DRYING OF HOSIERY
UNFAVORABLE WORKING CONDITIONS
LOW OUTPUT PER "BOARDER"
WRINKLE ACROSS TOE OF HOSE
OUTSTANDING FIBRES
UNEVEN TOPS
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PROCTOR AUTOMATIC [illegible] DRYING AND STRIPPING [illegible]

This remarkable new Proctor & Schwartz Boarding Machine not only offers the highly important advantages mentioned above, over other methods of hosiery drying, but it makes seamless hosiery appear like the best full-fashioned hosiery . . . makes full-fashioned hosiery desired by women who *KNOW* . . . and makes men's socks appear to be made to order for the individual.

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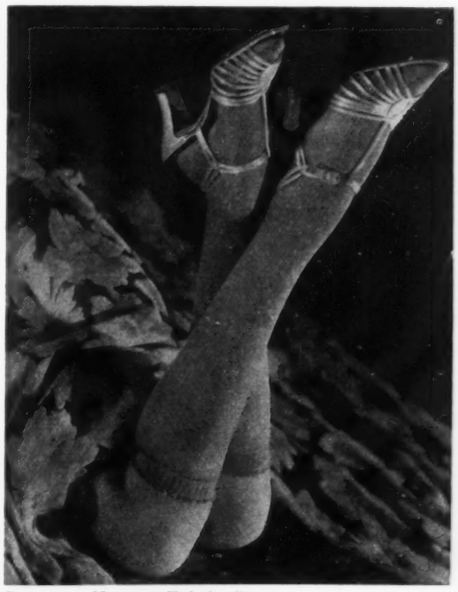
and at the same time probably longer wear by the consumer. The latter feel in many cases that the use of knee-length hosiery, especially in warm weather, gives them the hope of securing longer wear from hosiery as knee strain is eliminated.

It has other effects in the trade in that rayon yarn producers are making strong efforts to perfect yarns that will give satisfaction in knee-length full-fashioned hosiery where silk has had the field largely to itself in recent years. Many rayon yarn producers admitted a few years ago that their yarns were not adapted to the making of full-fashioned because of the tendency to bag at the knees but they no longer accept this viewpoint. They say knee-length full-fashioned can now be made from their special yarns and several assert that progress is being made so that full length garments of this type will soon be made on a wider scale in the full-fashioned hosiery industry than heretofore. Impetus to this trend was given by the use of more rayon in such hose when elastic yarns brought knee-lengths into the spotlight.



Courtesy, Narrow Fabric Co.

Knee-length hosiery with welt made of "La-ce-lastic" . . . . .

Although the public reception to textile products made with elastic yarns has been favorable and most distributors agree upon their utility there are some dry goods wholesalers who remain to be "sold" on this relatively new product. One large wholesaler of hosiery in Philadelphia said that he had not put any knee-lengths in his spring lines because he did not believe "that the elastic top would give satisfactory wear." Instances of this type indicate that not all in the trade itself yet realize the strides that have been made in the last few years in perfecting elastic yarn over the varieties formerly used.

June Hosiery Shipments Above Last Year

The National Association of Hosiery Manufacturers reported that total shipments of all types of hosiery during June, 1936, amounted to 8,846,704 dozen pairs. This was an increase of 1,334,153 dozen pairs, or 17.8 per cent over shipments for the same month last year. Shipments of all types of hosiery for the first half of 1936 were 5.8 per cent greater than for the first half of 1935. Each of the major branches of the hosiery industry showed an improved demand thus far this year as compared with the same period a year ago, with the exception of the woolen goods branch. The increases range from 2.0 per cent in the case of women's full-fashioned shipments to 13.6 per cent in the case of shipments of women's seamless hosiery, excluding wool.

Total production of all types of hosiery in June, 1936, was 9,478,988 dozen pairs, which was 632,284 dozen pairs greater than shipments for the month. Stocks of all types of hosiery on hand at the end of June, 1936, at 19,708,733 dozen pairs, were 452,750 dozen pairs more than stocks at the end of June, 1936, due chiefly to increases in stocks of children's and infants' hosiery, ribbed goods, and woolen goods.

The first half of 1936 saw a notable improvement in the stock position in the women's full-fashioned branch of the industry and stocks in most of the seamless branches now seem at a sound level. At the end of January of this year, stocks of women's full-fashioned hosiery on hand were over 1,000,000 dozen pairs greater than at the end of January, 1935, while at the end of June, 1936, stocks of women's full-fashioned hosiery were only 44,110 dozen pairs greater than at the end of June, 1935.

Claim New Fibers for Textile Manufacture

Interest has been aroused in Budapest by reports that two textile inventors, Josef Benkoe and Stefan Csaszar, Hungarians, have a special cultivation of mulberry seeds that produces a new variety of tree which supplies fibers understood to be particularly suitable for textile manufacturing. After the bark has been removed, the fibers from the young plants of the new mulberry tree go through various hot and cold treatments with lye, acids, salts, etc., serving to eliminate the lignines and pections. It is said that the fibers so treated are white and lustrous and have a soft feel. The length of an elementary thread is said to be from four to five centimeters.

Textile Drying Research

A complete review of the discussion on textile drying at the conference on this subject, held by U. S. Institute for Textile Research in May, has been published in the August issue of *Textile Research*, together with a list of literature references that were prepared for the conference. The June issue of this magazine published the papers delivered at the conference, and the two issues provide the most complete review in existence of current textile drying practice.

This conference demonstrated conclusively that there is little scientifically reliable information as to time-temperatures at which the various textile fibers and their yarns and fabrics can be safely dried, that many mills are losing money because they are drying at too low temperatures and dryer production, and that others are losing money and reputation because temperatures are too high and products are damaged. As the result of a unanimous request of the conference, U. S. Institute for Textile Research has undertaken to raise $5,000 for a scientific study under its auspices of economical and safe drying. Subscriptions of $100 each are sought, with the proviso that payment will not become due until the whole fund has been subscribed.

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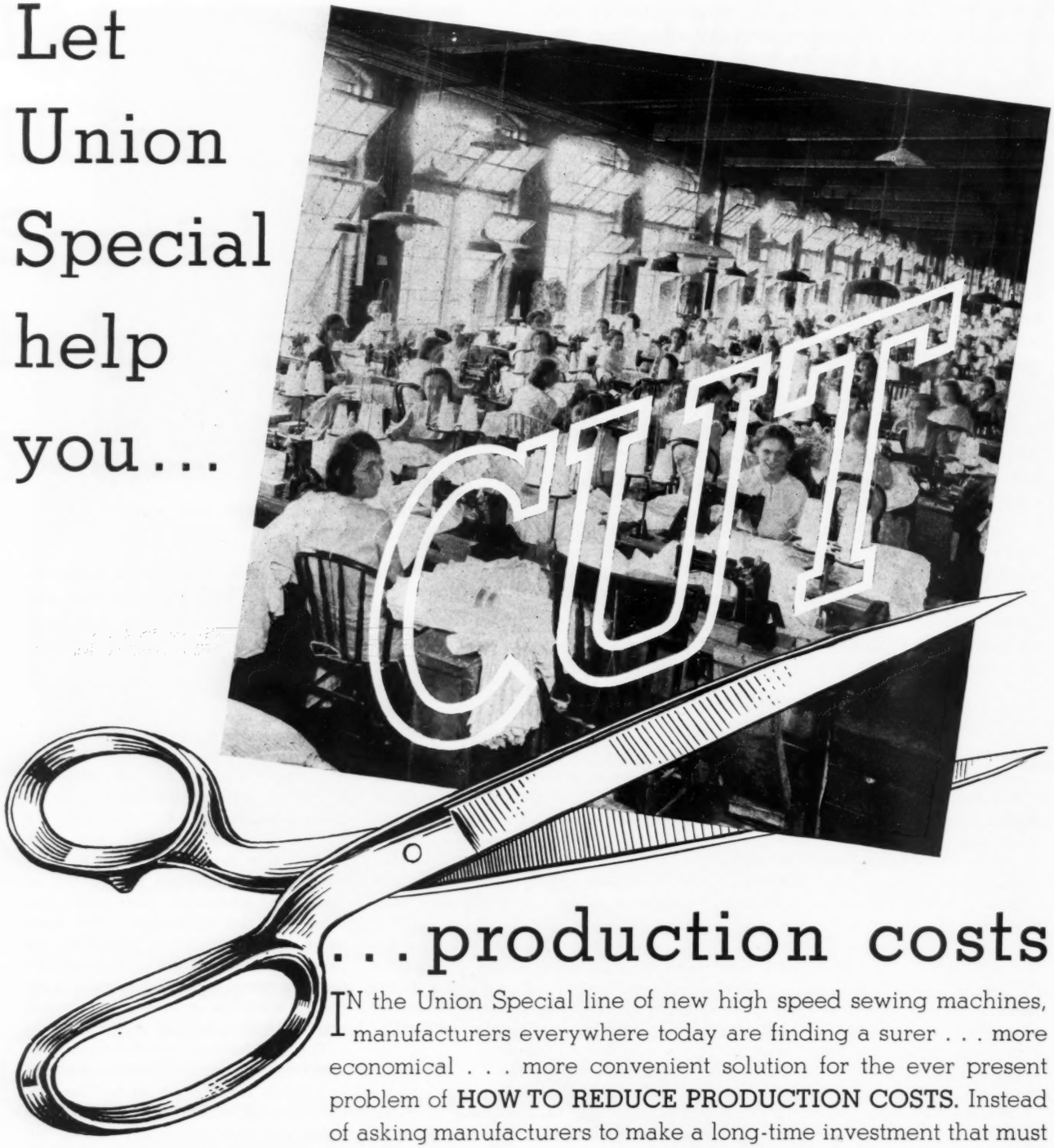

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Crepe Twists for Full-Fashioned

By William T. Leggis

THE CURRENT vogue of crepe hosiery appears to be in full swing, and from all indications will be with us for some time. The novelty of these twists and their practicability have caught the consumer's fancy. The reasons for the wide acceptance of crepe hosiery is that the consumers have discovered that crepe hosiery are permanently dull, that they do not catch or pull so easily—and that they wear better than the ordinary hosiery. However, they have also discovered that the tendency to run has not been decreased. Laboratory tests have substantiated these findings.

The crepe vogue has brought forth a multitude of names for the various twists, among which are "crepe", "compensated crepe", "Suede Crepe", "Voile de Chine", "Koryarn". The latter three names are copyrighted and are used by certain manufacturers to designate their brands of crepe.

At the present there are no standards as to what twist is necessary in order for a yarn to be genuine crepe or compensated crepe. In the final analysis a crepe is a crepe only if it shows a permanent dull luster and a crepy appearance. At present in the hosiery trade there is a tendency to call all high twists above 40 turns per inch crepe regardless of the fact whether or not they exhibit the crepy effect.

In weaving, the term crepe is universally understood and is applied to a finished fabric which exhibits a pebbly effect due the tendency of the filling threads to untwist after boiling off. In other words, the crepe effect is seen on the warp threads, that is, on the face of the fabric. In hosiery yarns the situation is quite different. The pebbly or crepy effect must be secured on the yarn itself. This effect is accomplished by means of the compensated twists or, as one company has so appropriately termed it, "Koryarn". The object of this type of twist is to have one yarn or thread wrapped about the other. This is accomplished by first twisting one or more of the threads to be doubled together, then combining and twisting together in the opposite direction with an untwisted thread. During the final twist, the untwisted thread contracts and acts as a core, while the threads twisted at the start, increase in length and appear as wrapped around the core yarn. Fig. 1 illustrates and describes this effect clearly.

In the sketch, *A* illustrates a 2-thread compensated crepe in which a single end of 13/15 denier silk twisted 65 turns per inch *"S"* is doubled together with an untwisted 13/15 denier silk. The final twist of 60 turns per inch *"Z"*, removes the twist from the twisted thread, and puts in twist in the untwisted thread, simultaneously while the two threads are being twisted about each other. The twisted thread increases in length while the untwisted thread contracts, resulting in a final 2-thread yarn in which one thread is wrapped about the other as a core. Sketch *B* illustrates a true crepe. Note that the core effect of *A* is absent. Type *A* yields a very crepy, dull luster yarn. Type *B* yields a very smooth, dull luster yarn with practically no crepe effect. A common variation of Type *A* is to twist both individual threads 65 turns per inch *"S"* singly, then twist together 60 turns per inch *"Z"*. This latter twist yields a very smooth dull luster yarn with no crepe effect and not as sheer as Type *B*.

The other accompanying sketches illustrate the most popular types of crepe twists found in hosiery. There are numerous variations of these twists but the principle is the same. As stated, there are no standards as to how high a twist is necessary to secure a genuine crepe. However, the greater the twist, the more pronounced is the crepe effect. Some manufacturers twist only 40 turns per inch, others go as high as 75 turns per inch. Yet both are sold as genuine crepe. Some of the cheaper hosiery sold as crepe are twisted as low as 30 turns per inch and the beautiful dull luster is removed in the first washing. The high cost of throwing crepe yarns for hosiery almost render their use in cheap hosiery prohibitive, and the consumer is likely to get "stung" with "Genuine Crepe First Quality" in the very low priced field. Crepe seconds and irregulars are plentiful on the market, due to the difficulties entailed in throwing and knitting, which diminishes the percentage of first quality stocking produced to approximately 50 to 60 per cent.

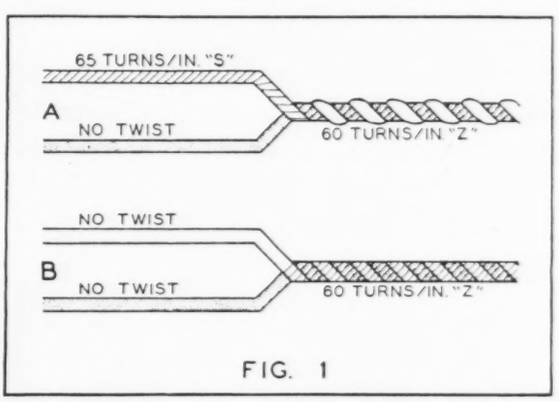
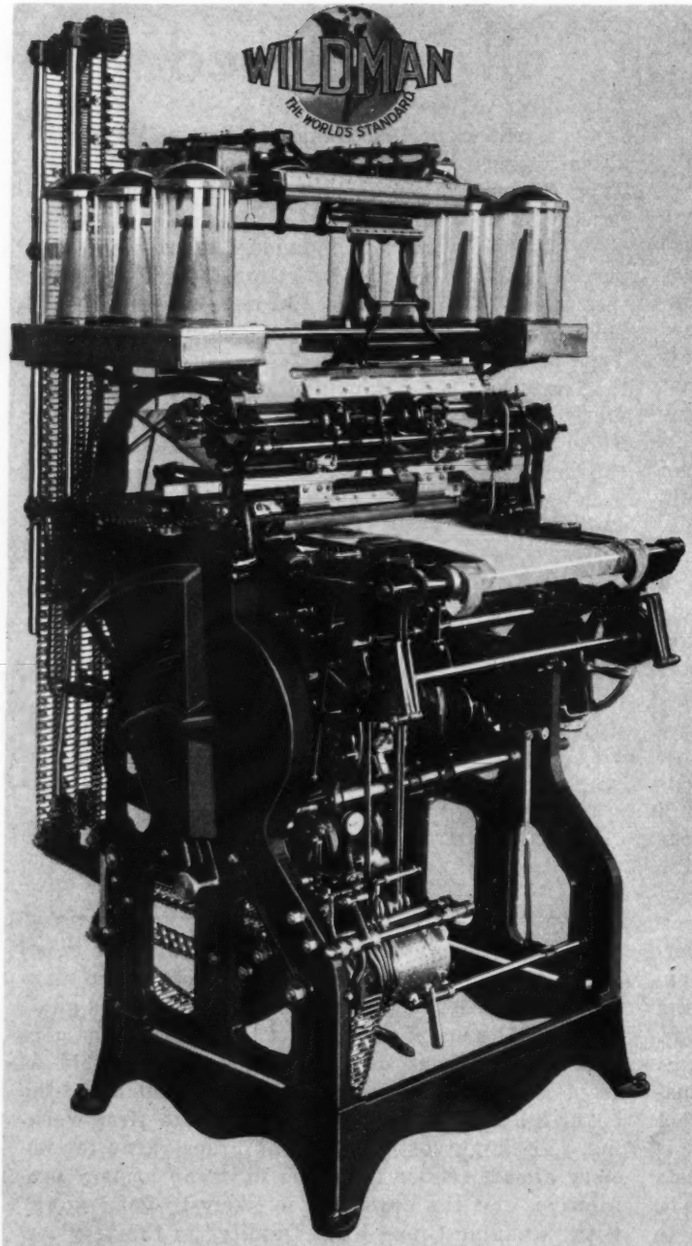


FIG. 1

The high cost of throwing crepe yarns for hosiery due primarily to the considerable amount of single end twisting, double 5B operations and high final reversed twist, which has stimulated the use of 20/22 denier silk. The throwing cost of a 3-thread 13/15 denier crepe in which 2 ends are singly twisted, then doubled together with an end of untwisted 13/15 denier silk and twisted in the opposite direction, can be reduced approximately 33 to 50 per cent by utilizing 2 threads of 20/22 denier silk, and single end twisting of only one thread. Plate 2 illustrates the most common types of 20/22 denier crepes.

How long the crepe vogue is to reign is problematical. When women again desire the soft silken sheen and the luxurious feel of silk, which, by the



HOSIERY INDUSTRY WELCOMES . . . *New* SINGLE HEAD SINGLE UNIT Machine

The most important hosiery manufacturing development in recent years. Regular French Foot stocking, complete . . . with leg and foot perfectly matched in one continuous operation . . . one of many outstanding advantages offered by this efficient SINGLE HEAD . . . SINGLE UNIT Machine.

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The New

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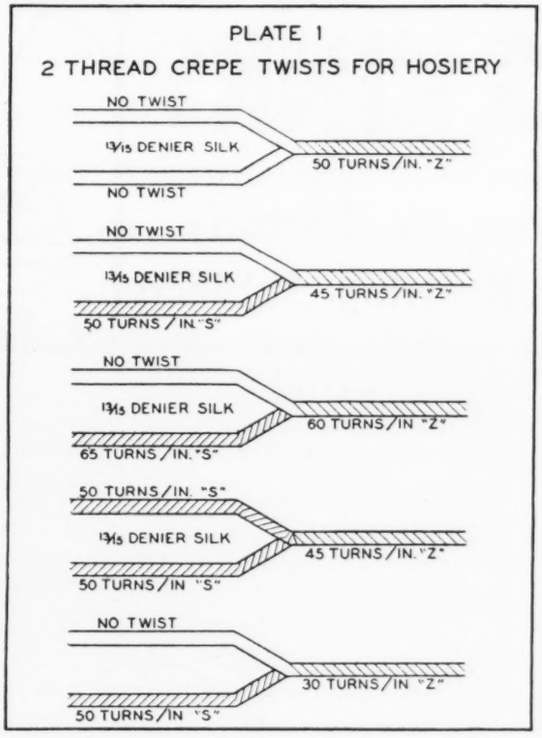

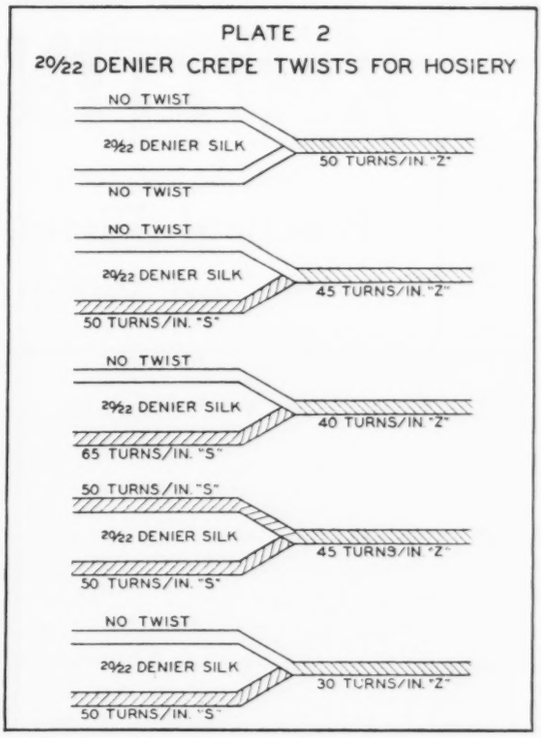

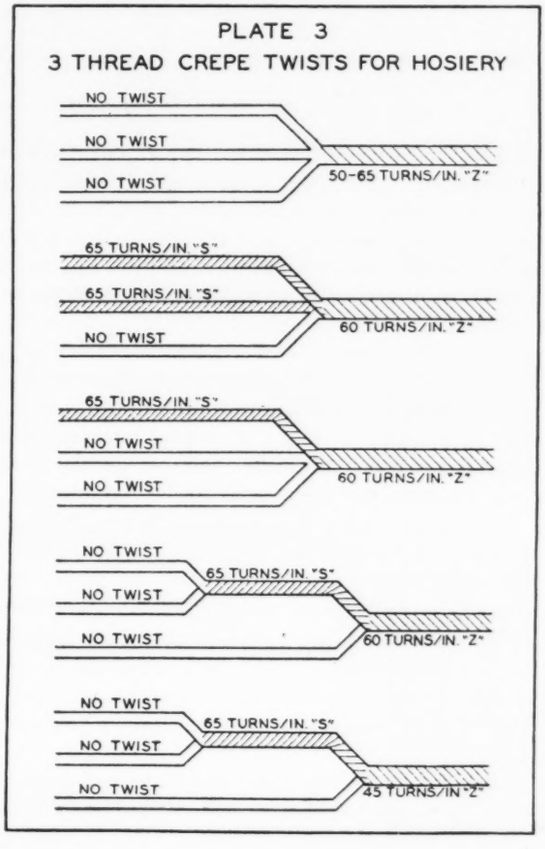

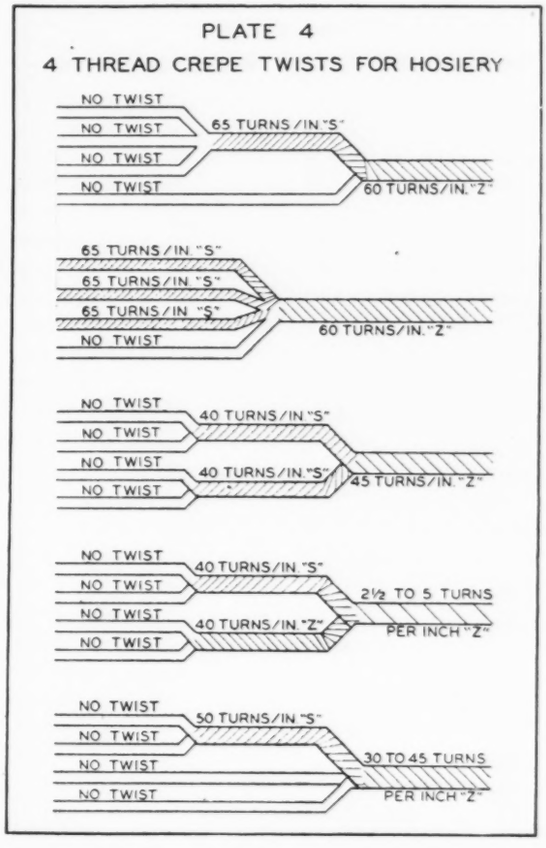

way, are the very properties which have always identified silk as the "queen of fibers", then the hosiery crepe vogue will cease. Some concerns are at present attempting to bring back the vogue of lustrous silk hosiery and are featuring "luster" in their advertising. No doubt they will eventually succeed, for fashion and the mind of women are fickle.

Editor's Note: Since the foregoing article was prepared, the National Association of Hosiery Manufacturers have designed minimum twist requirements for crepe hosiery. (See page 129).

Practical Experiences With 3-Carrier Attachments on Full-Fashioned

A user gives his observations as to whether "ringless" attachments reduce the percentage of seconds and whether they permit the use of lower grade silk—and why. What is your experience along these lines? . . . . . .

EDITOR COTTON:

With reference to the request from "CONTRIBUTOR No. 6420" published in a recent issue of your magazine, for a discussion of the 3-carrier attachment for knitting ringless full-fashioned stockings, the most natural and logical advantage is a higher percentage of first quality merchandise, so far as rings or shadows are concerned. We doubt its being possible to lower seconds very much below the accepted standards of single-carrier fabric of a year or so ago. Since the advent of the ringless attachments and the wide adoption of them, it has become more and more difficult to satisfy any part of the trade with stockings showing rings and shadows such as formerly had been considered a high standard of inspection.

We do not believe that it is either practical or possible to use lower grades of silk than were formerly used on single-carrier construction with any degree of satisfaction. To the contrary, it is our judgment that better quality of silk will have to be employed in order to get anything like satisfactory results.

The very nature of the ringless attachments, that is, employing three carrier rods and fingers where only one was formerly employed, necessitates closer and more accurate adjustment of the carriers in every respect, also much thinner carrier fingers to allow satisfactory clearance in passing across each other in the knitting operation. The thinner finger requires smaller thread tubes. These would prove advantageous even if not necessary on account of the perfect thread control required. Naturally smaller thread tubes carry smaller openings, which result in an increased amount of press-offs unless the silk used is of high quality so far as neatness and cleanness are concerned. And if the evenness of the silk is not of high quality, an alarming amount of washboard fabric will develop, and where washboard fabric is too bad it becomes necessary to classify the goods as substandard or irregulars. Herein lie the dangers and possibilities of producing a higher percentage of waste and seconds than on the single-carrier system.

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

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There are several different types of 3-carrier attachments on the market, all of which will, as far as we know, give very satisfactory results in operation when properly attached and adjusted. The mechanical parts and actions of some of the types are much simpler than others. But even the simplest type requires considerably more attention and effort from the knitter than the conventional or single-carrier type, but we have found that after our knitters get well trained and thoroughly familiar with the required settings and adjustments of the 3-carrier attachments that their production eventually comes up to about the same standard as the single-carrier production.

Naturally, there is more of a fixer's problem on 3-carrier attachments due to the fact, as we have already indicated, that two additional carriers are brought into play, as well as the mechanism for controlling the carriers, in addition to the smaller and thinner wall carrier tubes, which have to be more carefully followed up due to the fact that they wear more rapidly, and when not in perfect condition produce broken fibers and press-offs.

Taking all of the foregoing into consideration, it is our judgment that the cost of producing three-carrier hosiery is appreciably higher than the conventional type.

CONTRIBUTOR NO. 6427

A trained expert held entirely responsible for the oiling of knitting machines is a good investment because with proper lubrication there are less breakdowns and loss of production.

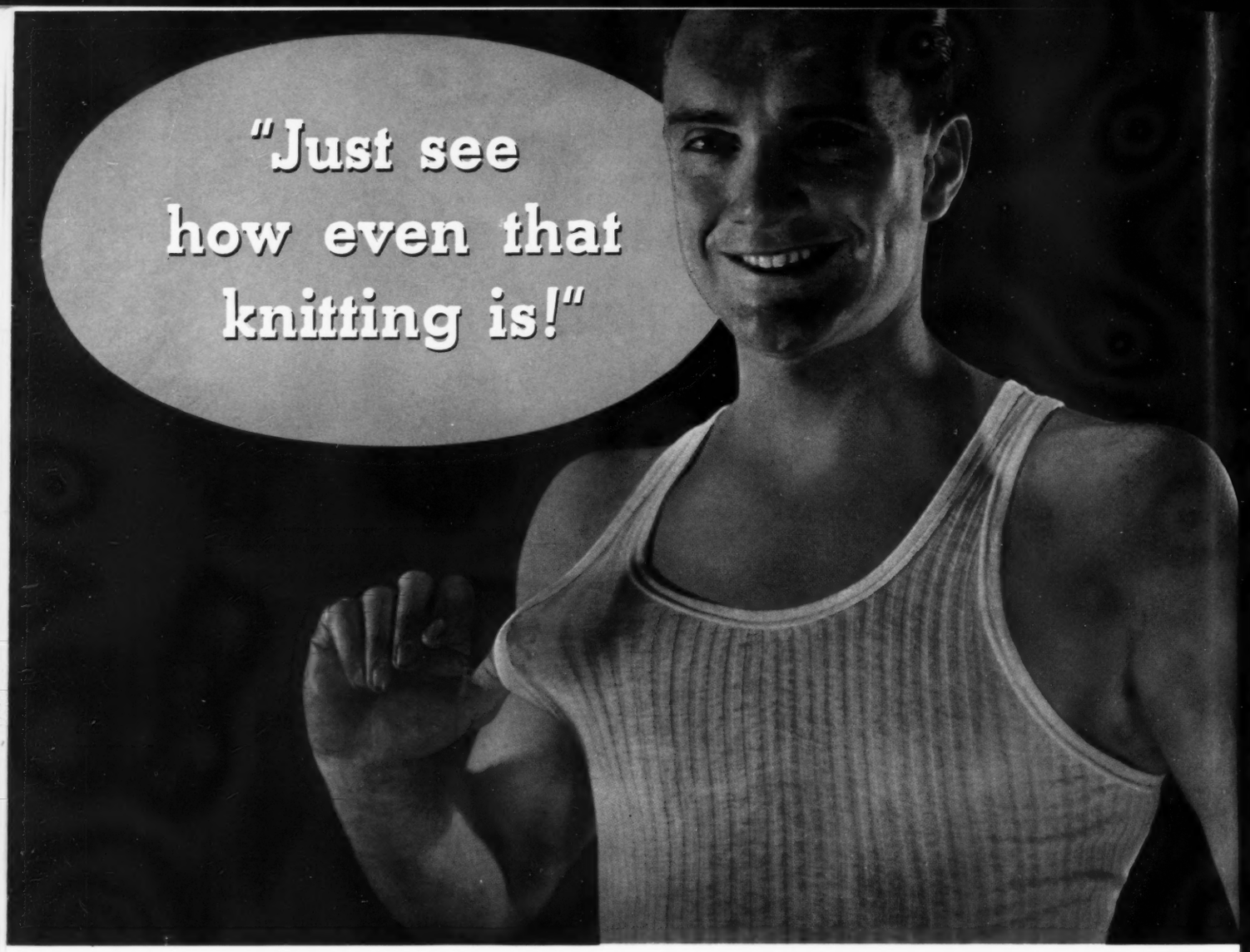
Machine-made means uniform width and thickness at the point where the needles leave the needle bar. Uniformity at this point is doubly important, for there must be no sidewise or backward or forward motion. The needles must fit snugly, securely, to prevent uneven knitting. For this reason the width and thickness of Torrington needles are determined by *machines* that are capable of unvarying precision. It's just one step—but an important one—in the series of steps that make Torringtons famous for their uniformity in every important detail.

TORRINGTON

NEEDLES and SINKERS

WE CALL YOUR ATTENTION

to the fact that Torrington now offers sinkers, dividers and split dividers . . . machine-made...built with the same careful attention to accuracy and uniformity of detail that has established the reputation of Torrington Needles.



THE new trend to "knitted elasticity" in men's shorts, undershirts and union suits is a challenge to your knitting efficiency. It takes care and precision, good machines, good workmen and *good needles* to create garments of this type that keep their shape and give long-lasting service. The needles you use may mean the difference between good knitting and superlative knitting that rouses admiration. Torringtons, the stronger, smoother, more uniform *machine-made* needles can help you keep turning out knitting jobs that command attention . . . jobs that make a customer say "just see how smooth and even that knitting is!" . . . There's a Torrington needle for this type of knitting and every type of knitting.

The Torrington Company

ESTABLISHED 1866

Torrington, Conn., U.S.A.

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COVENTRY, ENGLAND AACHEN, GERMANY

TORRINGTON *Latch* NEEDLES

Picot Top and Stripe Attachment for the Model K

EDITOR COTTON:

Recently the writer developed an attachment for making a picot top, combined with decorative stripes, which has proved very successful after several months of operation. This attachment is simple in operation, does not slow production and is easily maintained. Part of the attachment is the well known Scott and Williams picot mechanism with several changes and additions to accomplish the stripe changes.

With this description are three drawings (Figs. 1, 2, 3.) Fig. 1 represents a view from the left of the machine, Fig. 2 from the rear and Fig. 3 a view from the right. None of the drum-cams is shown but will be explained so that any one familiar with the Model K machine will readily understand where they are placed and their uses.

In Fig. 3, *6* represents the high speed gear of the machine. In the circular recess on the side of the gear are mounted four cams of tempered tool-steel which give the motions to the various parts of the

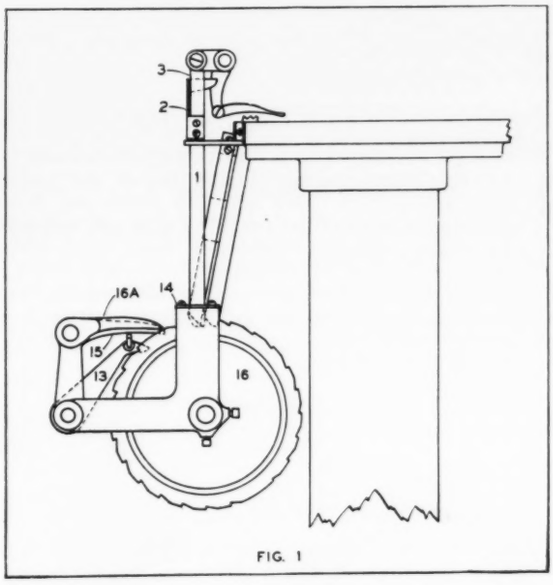


FIG. 1

mechanism. These cams are peculiar in shape for the following reasons. The angular slope on the leading end of each cam gives the yarn-finger change movement and the slight rise near the rear end gives the motion for cutting off the stripe thread.

The driving lever (*38*, Fig. 3.) together with the tempered tool-steel cam-follower *7* is mounted loosely on the right end of the main drum shaft and gives shaft *17* (Fig. 2) a sufficient oscillating motion to rack the stripe drum (*16*, Fig. 1) one movement for each complete turn of the needle cylinder. This causes the proper movement of the vertical rods (*1*, *2*, *3*, *4*) to perform their respective duties which will later be more fully explained.

It will be noticed that there are two blank spaces in the rack wheel *16* (Fig. 1). These are for the purpose of bringing the drum to rest at two periods dur-

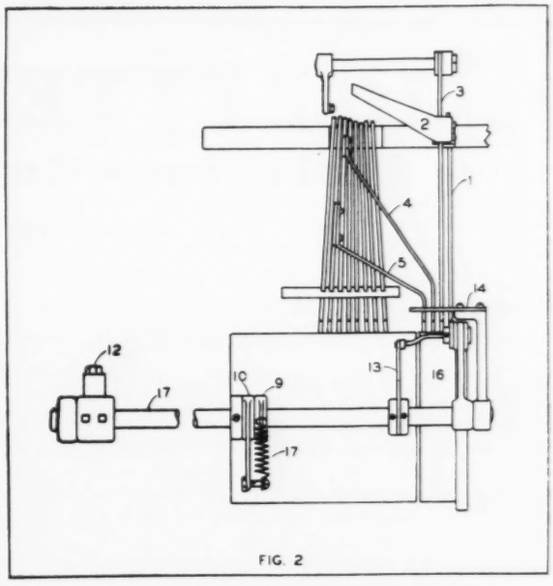


FIG. 2

ing the cycle of changes in making the top of the stocking.

Parts *9* and *10*, (Figs. 2 and 3) in combination with spring *17* are for the purpose of retrieving the motion imparted to it by lever *8*. Part *10* also causes the mechanism to be at rest except during the welt process. This is accomplished by a lug on part *10*, which projects almost to the main drum, coming in contact with a cam mounted on it. This causes spring *17* to be under tension while the mechanism is active. When the cam passes the projection the spring tension is relieved and the mechanism becomes inactive.

15 is a starting pawl which gives an initial movement to drum *16*. This starting pawl is controlled by lever *13* (Fig. 1) and it is in turn controlled by cams on the main drum.

Adjusting screw *12* (Fig. 3) is to give a finer adjustment to pawl *16*. Part *18* (Fig. 3) is adjustable to and from the shaft *17* to control the amplitude of oscillation of that shaft.

The vertical rod *1* (Fig. 2) and part *2* are to control the welt-presser through the usual connections.

The vertical rod *3* (Fig. 2) operates the right hand stitch cam block to make the tuck stitches for the picot edges of the welt. The diagonal rod *4* (Fig.

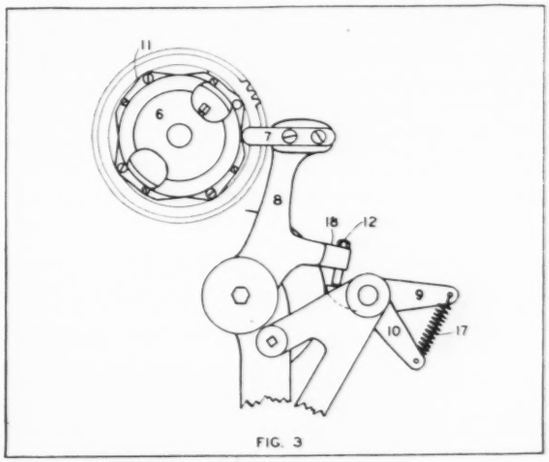


FIG. 3

Do It BETTER and FASTER

Finishing—Cutting—Pressing

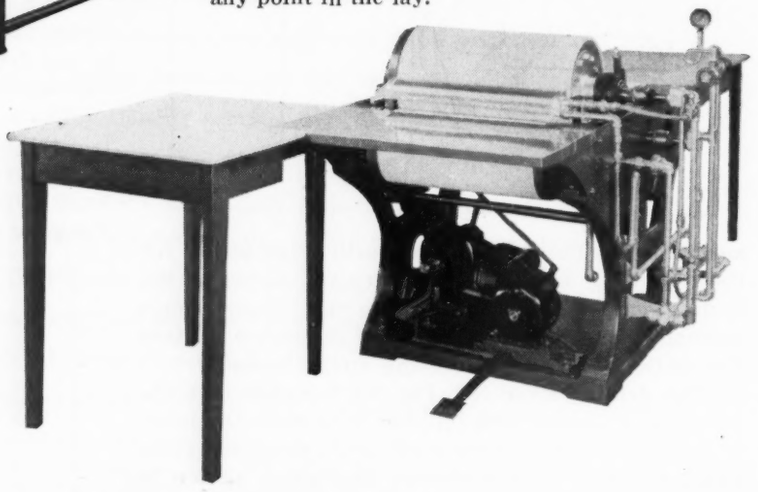
for Cotton Underwear

STEAM, SPREAD, CALENDER
then SPREAD again and FOLD

UNIVERSAL FINISHING MACHINE—will establish uniform width thruout the piece. It will establish widths even beyond normal in fabric so they will hold thru all the operations of the mill. This machine is a necessity for rib fabrics and also produces a better finish on flat knit than any other method. This machine has replaced earlier equipment such as our plain folder and steam folder because it will establish and hold increased widths and bring out quality appearance and feel.

CUT and LAY-UP.

AUTOMATIC LENGTH CUTTING & LAYING-UP MACHINE—actual production of the machine averages between 600 and 750 yards per hour—some users report the machine will cut and lay-up 75 dozen athletic shirts per hour. Machine is equipped with illuminated inspection rack so slightest imperfections can be detected. Imperfections can be cut out automatically at each garment length or by pressing a lever can be cut at any point in the lay.



PRESS

ROTO PRESS—made for pressing Athletic Shirts, Polo Shirts, Sweat Shirts, Sweaters, Bathing Suits, Drawers and Underwear. Production averages more than 300 dozen Athletic Shirts in 8 hours. Most economically operated by one girl seated at front to feed garments into the press and another girl standing at the folding table in the rear to fold garments ready for boxing, as they come out of the press.

Shields Method equipment consists of Knitting . . . . Dyeing . . . . Drying . . . . Finishing . . . . Cutting . . . Pressing machinery . . . . for improving the quality and lowering the manufacturing cost of Tubular Knit Underwear and Outerwear.

Grand Rapids Textile Machinery Co., Grand Rapids, Michigan, U. S. A.

2) controls the stripe finger. Diagonal rod *5* operates the shear cam mechanism to cut off the stripe thread.

I will now describe the sequence of movements which take place to produce the striped picot welt. First, the make-up is accomplished in the regular Model K manner and knitting is continued until the mid part of the welt is reached, when a slight forward movement of the main cam drum causes lever *13* (Fig. 1) to drop, thus allowing pawl *15* (Fig. 1) to give pattern drum *16* its initial movement and allowing pawl *16A* to become active. At the same time a cam near the right end of the main cam drum causes lever *10* (Fig. 3) to stretch spring *17* causing the whole mechanism to become active. This allows the stripe drum to make a half revolution during which the right hand stitch cam block is withdrawn for two revolutions of the needle cylinder to produce the picot tucked stitches. Following this with an interval of one plain course of knitting between each, the colored stripes are produced by means of the diagonal rod already described. The mechanism still remains active, although the stripe drum is at rest, until after the transfer which completes the welt. The stripe drum is then again started as before for the last half of its cycle. This last movement of the stripe drum causes to be produced the one course tucked colored runstop. The remainder of the stocking is completed in the regular manner.

GEORGE E. COTTRELL

A Question on Combining Departments in a Knitting Mill

EDITOR COTTON:

I know of a southern mill which manufactures ladies' seamless hose, men's half-hose, and children's anklets, the ladies' seamless being knit in one room and the men's half-hose and children's anklets in another. The knitting operations are carried on in two distinctly different departments under two different department heads. This also necessitates two looping departments, two inspecting departments and two mending departments. I have heard much discussion pro and con as to whether or not it would be advisable to combine these two departments, which would mean that we would have one knitting department, one looping department, one inspecting department, and one mending department.

I would appreciate some comments from some of your readers, based on experience, as to the advisability of combining these two departments; of course I would like to have those favoring the consolidation to state their reasons for combining them, and those opposing it to state their objections.

This same condition probably exists in a number of southern mills and a discussion of this kind would possibly be of widespread interest to the industry.

Up until a few years ago it seemed to be the policy of all the larger manufacturers to have separate units for the manufacture of different types of hosiery, and I am wondering whether it might be economy under present conditions to make some consolidations.

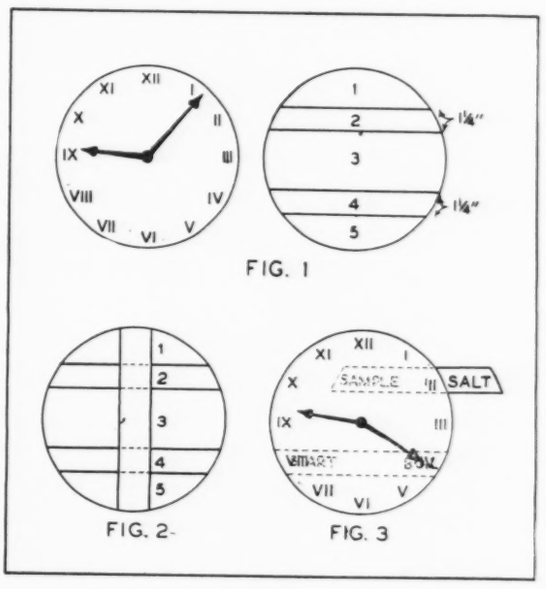
CONTRIBUTOR NO. 6567

Another Method of Timing Dye-Runs in Hosiery Mills

EDITOR COTTON:

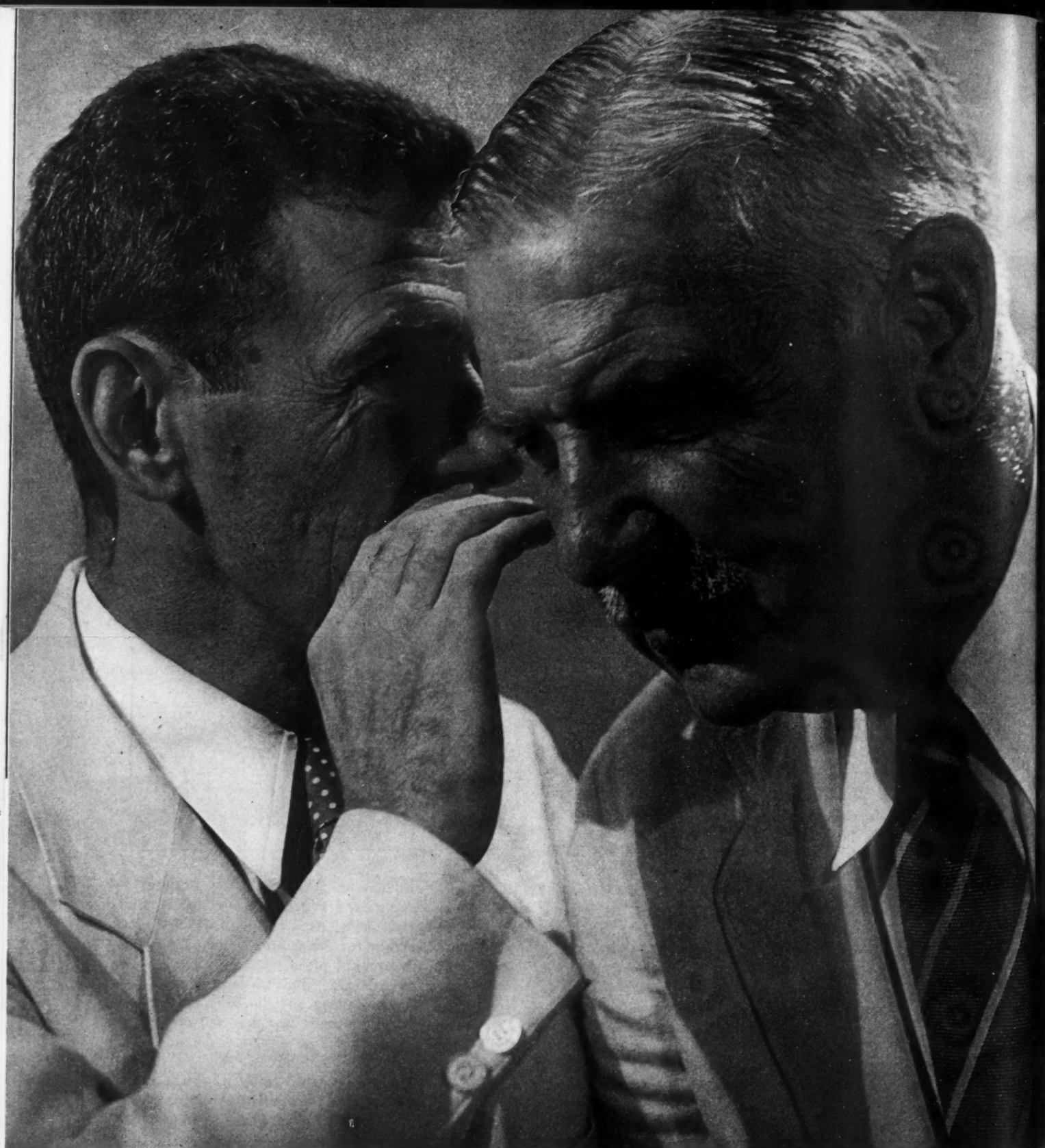
I notice on page 143 of the May issue of COTTON that "CONTRIBUTOR NO. 6494" would like to know the best method to time runs in the hosiery dye-house. Naturally, as we are using the method that I shall describe, we think it is the best; there is absolutely no guess-work or haphazard handling of a dye once the run is started.

A dummy clock is used in our method. It is not necessary to have a carpenter make the little clock but a much neater job will be done if the services of a carpenter are employed. Cut two circles, eight inches in diameter, out of ¾-inch wooden stock. Use one circle for the face of the clock and cut the other circle



into five pieces leaving No. 2 and No. 4 pieces 1¼ inches wide as shown in Fig. 1. Pieces Nos. 1, 3, and 5 are then nailed on the back of the other circle leaving a small margin for No. 2 and No. 4 to slide back and forth. An upright piece ½ x 2 inches is nailed in the center as in Fig. 2. This piece is to keep pieces Nos. 2 and 4 from falling out the back of the clock. A brace may then be made and screwed on this upright piece so that it will be on the right side of the machine just above the gear box.

The next procedure is to paint the whole clock white or aluminum. On the face of the clock put the numerals as on a regular time piece. Pieces Nos. 2 and 4 are the sliding parts and on the ends of these may be painted "Salt", "Boiled", "Sample", "Start", or anything else that is necessary. If more than four such words are needed then one of the circles may be cut into seven pieces. Small clock hands should be cut out, painted black, and placed in the center of the clock face with a small screw. It will be noticed from Fig. 3 that only one slide will be out at a time. If the run is to be salted at 9:20, the "Salt" slide may be pulled into view and the clock set at 9:20. If the run is to be sampled 20 minutes after it is salted, the



"A word to the wise is enough"

OLD PROVERB

In a 40-hour week the new READING high-production twenty-four section forty-five gauge full-fashioned knitting machine produces nearly sixty per cent more volume and more than seventy-five per cent more value than the ordinary eighteen-section thirty-nine gauge machine.

TEXTILE MACHINE WORKS • READING PA.

run may be salted at 9:20 and the "Sample" sign set with the clock hands on 9:40.

If the operator happens to forget the machine, anyone in the dye-house can glance at the clock on that machine and tell just what is to be done.

It might be a good idea to put a small nail at the end of each slide so that the slide will not fall from the holder.

This method of timing dye runs in a hosiery dye-house is efficient and should "CONTRIBUTOR NO. 6494" find time to have these clocks made (one for each machine), I am sure he will quickly see what an asset they are in his work.

CONTRIBUTOR NO. 6554

One-Sinker Stripes on Reverse Plaiting Machines

EDITOR COTTON:

You have been carrying some discussions on the method of producing a perfect vertical one-sinker stripe on the reverse plaiting machines using acetate over cotton and knitting a loose fabric on the Scott & Williams HH machine on half-hose.

Now I think it is asking just a little too much to use the word perfect when applying to a vertical one-sinker stripe but we are making them and I will pass our method or one way of making them on to the man that asked the question some time ago.

I would make this one-sinker stripe by running the tension on the acetate yarn and reversing the cotton with the sinker. I would use either the Scott & Williams 1999 sinker or the 3164. On cotton the 1999 sinker is better because it turns the fabric better or reverses the yarn better, but on acetate and rayon I would use the 3164, which doesn't shear as badly. There should be a "turnover" sinker next to the plaiting sinker.

Another way is to run the tension on the cotton yarn and to cut the sinkers the opposite way. In some patterns it works better by this method.

Using the old style sinker it is hard to make a vertical stripe but with the 1999 or the 3164 it is done fairly well. It is also well to have a little friction on the sinker by bending the sinker back next to the shank.

A perfect one-sinker stripe is hard to make but we make them to sell and they stick.

CONTRIBUTOR NO. 6511

EDITOR COTTON:

Some time ago a question appeared in your magazine when a contributor wanted to know how to make a perfect vertical one-sinker stripe on Scott & Williams HH reverse plaiting machines using acetate over cotton and knitting a loose fabric.

If you ask me, I think that trying to get a *perfect* one-sinker stripe is looking for too much from a machine. I have never seen a reverse that didn't have at least some variation or a ragged edge. The needle stripe is true, however.

We have never done any of the reverse work on the type machine mentioned but we did have some B5's set for this purpose. They were not perfect but they sold.

I understand there is a new NRP machine out that will take care of reverse plaiting very successfully, but to ask for a perfect one-sinker stripe is beyond my conception.

CONTRIBUTOR NO. 6516

Answers Spoiled Leg Problem

EDITOR COTTON:

This is in answer to "CONTRIBUTOR NO. 6493," who is having trouble on full-fashioned with spoiled legs from toppers and footers, and who states the trouble has increased since he installed alternating 3-carrier attachments. His question appeared on page 143 of the May issue.

We all have this problem more or less. A 4-needle lock should help to eliminate breaking out at the corners rather than cause it as he suggested. We even use 6-needle lock on our 3-carrier heel-within-a-heel work.

We must be sure to rock-in the lock. I mean we must be certain that the rocker is on until the last stitch of the lock is completely formed by the sinkers; also, on coming back, the rocker must be on as the first stitch of the lock is being formed by the sinkers. I let three sinkers go by the carrier after it is stopped and then set the rocker. This assures the rocker being completely on during the lock. The toppers must top-in this and it should therefore be knit as loosely as is reasonable. An inside selvage attachment is a great help at this particular point, especially on fine work where heels are knit exceptionally tight.

Nearly all sales departments have the idea that the more silk that is packed into a heel, either by using heavy thread splicing or by knitting tight, the better the stocking will wear. This is erroneous. A tight stocking will wear itself out by the friction of one end rubbing against another, whereas, a stocking knit a little looser will be much more flexible and will outwear the one that is knit too tight. This, of course, must be within reason and it is a problem for the knitter to set the salesman right.

It is surprising to notice the decrease in bad tops when we begin making a daily collection of all footer press-offs that cannot be topped-on again, and by keeping a record of the number and the machines from which they came. The knitter will improve his work when he learns that a record is being kept. Press-offs are caused by knitters being careless when starting a set and by their not making sure that all ends are tucked under the heel tabs and threaded.

The toppers should be taught to latch-up runners on their bars with a mend hook; this will enable them to top-on these bad tops and then latch-up runners that result therefrom. This will salvage a lot.

We should also be certain to put enough raveling courses in the leg so that the stocking can be topped-on the second time—10 to 14 courses are sufficient.

CONTRIBUTOR NO. 6523

We make needles. But—what we sell, and what you buy is known performance value . . . the assurance of greater speeds, more firsts, fewer seconds and a clearer, sheerer fabric. That we are America's largest producers of Spring-Beard Needles and that nearly all manufacturers of fine quality silk stockings are standardized on Royersford Needles is a tribute to dependable results.

The prescription for better knitting

ROYERSFORD NEEDLE WORKS, INC., ROYERSFORD, PENNSYLVANIA

Southern Office: Provident Bldg., Chattanooga, Tenn. • Louis Hirsch Textile Machines, Inc., Special Representatives

ROYERSFORD NEEDLES

THE KNIT GOODS MARKETS . .

Excellent Demand for Underwear Feature of More Active Knit Goods Markets---Prices

Philadelphia, Pa., August 16, 1936.

THE KNIT GOODS MARKETS are in the healthiest position they have enjoyed for a long period with the possible exception of full-fashioned, in which some manufacturers still complain of unsatisfactory volume and absence of profit margins. Other branches of the knitting trade are active and higher prices for cotton yarns are bringing about goods advances from week to week. This in turn is stimulating the placing of advance business by large wholesale and retail distributors.

Underwear manufacturers, completing one of the best lightweight seasons they have had in many years so far as volume was concerned, have already booked a very large volume of business for the fall season. In addition to this, there has been a considerable interest in certain sections of the market for underwear to be delivered during the spring of next year. Volume in all knit goods items will be exceptionally high this fall with the wholesale and retail distributors from present indications.

Evidence of the much improved position of practically all branches of the primary hosiery market continues to accumulate. While this has not been translated into price advances, generally speaking, a firmer tone is noted on practically all merchandise.

Much of the extremely low priced full-fashioned goods has been cleaned up and in the unbranded market knitters which had taken substantial orders at low quotations last month, are now asking more for their goods. They have not been able to sell at the higher levels as yet, but in view of the further rise in raw silk, there is a general opinion they will get them during the next three weeks.

Sellers say heavy commitments have been made on misses' and infants' anklets for next spring regardless of the fact that few definite orders have been placed. Mill representatives who have close connections with large outlets for this type merchandise, have received assurances of heavy initial orders.

Heavy Commitments in Anklet Business

While much anklet business remains to be placed, of course, there is every indication that this jobbing trade as well as the chains, will operate early for spring because of the way they have cleaned out their present stocks. What is more important, early buying is confidently expected because of the possibility of higher cotton and rayon yarn prices. In view of this, manufacturers of knit goods have been buying yarns farther ahead and similarly distributors of all types of hosiery are beginning to proceed in a like manner.

Women's seamless and medium and better priced fancy half-hose continue to move in satisfactory volume, while men's full length fancies, with self-supporting fancy tops have been sold heavily for fall in many sections of the market. July business was exceptionally heavy in the primary hosiery market, there being instances of selling houses handling a general range of full-fashioned and seamless goods for the jobbing trade, whose sales for the month practically doubled those of July 1935. Active selling of hosiery at retail is now being fully reflected in the primary market and is counted upon to be responsible for heavy mill shipments of all types of seasonal hosiery over the next four months.

Both the wholesale and chain store trade have bought in larger quantities than usual. This is particularly evident in infants' socks and anklets and misses' anklets. In regard to the latter, some sellers say they have already booked large orders for next spring but others report that the buying movement is only now getting under way. All are confident, however, from the way inquiries are arriving that the business will be early and heavy. Practically all classes of children's hose for fall continue in strong position in the primary market. Most knitters of this class of merchandise consider themselves practically sold up for the season and it is believed there may be some delivery difficulties for buyers who did not place their orders early enough.

In the half-hose market, there has been a sharp improvement in all lines except the cheapest of fancies. Goods priced to retail at 25, 35 and 50 cents have shared equally in this spurt. On very low-end merchandise the largely increased exports from Japan continue to act as a drag on the forward sale of domestic lines. Large buyers among the chains, which have persistently refused to handle Japanese half-hose are unwilling to operate ahead in many cases on domestic merchandise until they are reasonably sure that tariff action will be taken to restrict the imports.

Women's Seamless Has "Best Six-Month Period"

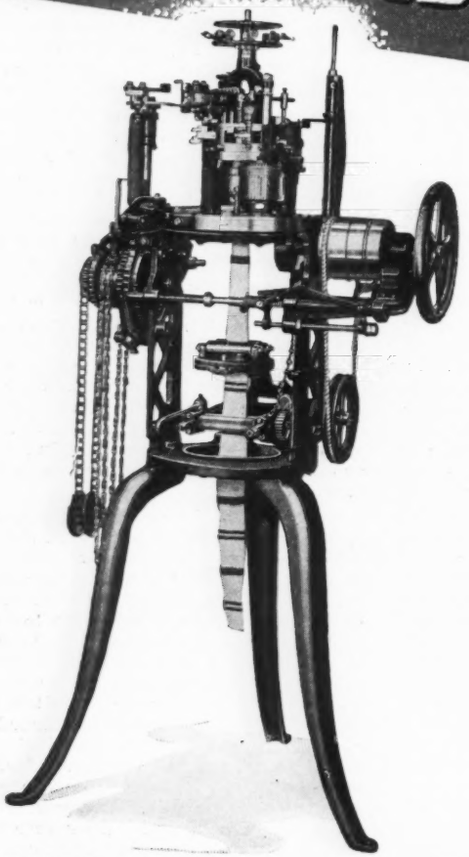
The women's seamless branch of the industry has concluded the best six-month period from the standpoint of volume in several years and now has made a satisfactory start on the last half of the year. Sales of knee-length numbers are holding up better than mill men expected and full-length numbers for fall delivery have been contracted for by large outlets in satisfactory quantities. Sales of knee-length goods have been good in both seamless and full-fahioned and in rayon as well as silk. In this connection, some large jobbers here report that there is not nearly the preference for full-fashioned that they find in full-length hosiery. Wholesalers say that knee-lengths retailing from 35 to 50 cents have been their most popular number. Many of them that did not go into knee-lengths this season in a big way have been surprised at the consumer distribution this summer, many of them being caught short with their stocks so that they will be in a very receptive buying mood when manufacturers begin to show their 1937 lines.

The part played by the advancing prices in cotton, silk and rayon in the substantial improvement of the seamless business during the last month has been important. It has caused buyers to place orders before manufacturers could advance prices in line with the upturn in the yarn market. At the same time confidence in the wholesale and primary hosiery market has been stimulated by the excellent retail distribution of all types of hosiery. In this connection, the Federal Reserve Bank of New York reported that sales of women's and children's hosiery by large department stores in that district increased almost 9 per cent during June as compared with the same month last year.

Improvement in sales of unbranded full-fashioned silk hosiery, with the aid of a strong raw silk market, has proceeded to the point where some sellers believe that the market is on the verge of a general price advance on low-end numbers. Buyers report a tightening on cheap goods and say it is difficult to uncover any quantity of merchandise at the low prices available a month ago. Buying has broadened to such an extent during the last few weeks that even mills which refuse to meet bottom quotations have booked a substantial quantity of business. Some mills are making very little effort to sell at present, believing they can obtain 25 cents more than today's prices in September. One feature of the present unbranded market is that good quality 45 and 48-gauge is still obtainable at figures which mills consider very low. Buyers declare it is difficult to find single-carrier 42-gauge merchandise at the low of $4.25 or thereabouts quoted in June by some mills, and that they can find few offerings of low-end ringless 42-gauge goods at $4.75, which was possible not long ago.

Ringless numbers regarded as pretty good quality are obtainable at $5.00 in quarter-dozen packing but large-sized orders and 10 and 15 cents higher than this figure have been reported, while some mills insist that they are getting business from their regular trade at $5.25 or even higher. Sellers generally are agreed that higher prices will prevail in the early fall on volume numbers in the unbranded market but they are unwilling to commit themselves how much of an advance is coming.

Brinton Ribbers



Rubber Lay-In
Picot Edge
3 & 4 Color Yarn Changes
Rack Welt
Mesh Designs
3 & 4 Feed Machines

•

Let the new, modern Brinton Ribbers carry the burden of your production problems. Modernize your old ribbers, by converting to the latest styles. . . . For dependable, economical production—rely on Brintons.

Full particulars on request

BRINTON
CIRCULAR KNITTING MACHINES

3700 KENSINGTON AVENUE
Philadelphia, Pa.

PLEASED WITH HER CHOICE . . A PERMANENT CUSTOMER

THE selling effort that inspired the initial purchase would have been wasted—and a source of future profit lost—had not the hosiery continued to "sell itself" throughout its reasonably long service life. But the hosiery pleased her . . . was dull and sheer and clear . . . resistant to snags and spots . . . *and* retained those qualities despite long wear and countless washings. So, this customer—representative of millions—buys again, and again . . . the source of repeat business upon which sound, profitable volume is built.

Needless to say, the hosiery that so satisfied her is "Brosco" Finished. For "Brosco" Finishes impart *all* the qualities so essential to meet the modern market—and the majority of quality hosiery produced today is "Brosco" Finished.

Economical to apply, but one bath is required to fix these finishes so firmly into the fibres that they will withstand innumerable washings.

Write for complete information . . . or have one of our hosiery experts call. No obligation.

SCHOLLER BROS. INC.
Mfrs. of Textile Soaps, Softeners, Oils and Finishes
Amber & Westmoreland Sts., Phila., Pa.
and in St. Catharines, Ontario, Canada

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Higher Silk Prices Expected

Many full-fashioned plants in this city are running almost full time at present and heads of these plants say that the unexpected and sharp rise in raw silk during June was largely responsible for an earlier than usual fall buying movement on full-fashioned hosiery. The amount of business placed thus far is probably in excess of that a year ago at this time. Manufacturers are not complaining of their inability to book business but rather of their inability to make money at the present prices of goods. This situation reflects itself in the position into which they have been forced in connection with their buying of raw silk. They have hoped to offset the low goods prices by being able to buy their raw material at lower levels but to date their hopes in this connection have not only been in vain but they have been forced to watch the raw silk situation creep slowly upward from week to week.

Raw silk prices continue strong in the face of predictions that they cannot hold present levels over a period of time. All the reports of increased imports of raw silk from China and Italy have failed to weaken the raw silk price structure. Even the most enthusiastic bears on the market admit not only that there may be no softening until late in the year but that higher-than-current prices may be in effect in September and October when the rush among full-fashioned plants is expected to be in full swing.

Volume on branded full-fashioned lines is reported fair to good by important houses but it is admitted there has been no buying rush as yet in this section of the market, which is in contrast to the large volume reported in the low-end section of the market. Better quality merchandise appears to have been relatively neglected up to date. Manufacturers report that buying by western and southern operators so far has been much more liberal than that done so far by the New York and Philadelphia trade, which hoped to buy quality merchandise for fall, at the lowest prices heard of yet in the hosiery industry.

On infants' novelty socks, anklets and allied lines for next spring, some of the largest operators among the chains and catalog houses have placed substantial quantities of business for the new lines. Prices are approximately unchanged from those quoted for last spring deliveries, although slight advances have been made on some numbers because of the increased use of elastic tops. Predictions are general that early buying will be the rule for next spring, buyers in close touch with the market situation being willing to cover a considerable portion of their spring requirements at approximately last season's prices, especially in view of the advancing tendency in commodity prices.

Minimum Standards for Crepe Twists

The steadily increasing demand for crepe silk stockings is making more complicated an already confused situation as to what constitutes crepe twists for hosiery. Stockings with all sorts of peculiar twists are being offered as crepes, some at prices so low that they cannot be made of crepe yarn as the silk throwing trade defines it. In view of this situation, the National Association of Hosiery Manufacturers early this month designated minimum twist requirements for crepe hosiery for the industry. A problem of the last six years, and one of especial importance to the trade since the buyer acceptance of crepe twist stockings in the last year is now regarded as partially solved by the action of the association in this connection.

That no actual definition of what constitutes a crepe was forthcoming, is attributed to the fact that many manufacturers have had excellent results with their own processes and consequently, any attempt to set up a rigid definition would be unfair to such constructions and would create nothing but confusion in the market. In view of this, it was decided to set up only minimum twist requirements. The hosiery association, in making the minimum twist regulations frankly recognized that many new yarn twists and combinations have been developed, producing stockings of a crepy appearance, which are apparently satisfactory to the distributor and the consumer.

It evidently considers minimum twists considered essential by the weaving trade could not be made to apply to hosiery. Opinion among silk throwsters on the recommendations were about equally divided, half feeling that the association faced realities in a practical manner, but others said that the recommended minimum on 4-thread stockings was too low and they added that some of the yarn twists possible under this minimum will produce stockings neither as dull nor as crepy as a 25-twist strand. Unbiased observers assert that the recommendations are the first definite step taken to prevent demoralization of quality for a type of silk stocking which now probably is accounting for less than 10 per cent of the total business, is no doubt headed for a much larger percentage.

Minimum Twists for Crepe Hosiery Yarn Recommended

NEW YORK CITY—Minimum twist requirements for crepe hosiery have been recommended by the board of directors of the National Association of Hosiery Manufacturers in an effort to clarify a confused situation. The association sponsors the designated minimums and urges their general acceptance and application. The recommended minimum total twists per inch are: 100 turns per inch for 2-thread; 80 turns for 3-thread; 60 turns for 4-thread; and 50 turns for 5-thread and over—with at least 50 per cent of the total twist to be in the initial twist, which may be either right or left, or both.

The board of directors, in reporting the recommended minimums, stated that it was neither desirable nor practical to define "crepe" hosiery, but that because a few manufacturers were offering and labeling hosiery as "crepe" hosiery which lacked sufficient twists to warrant its sale as crepe, it was decided to develop minimum twist requirements of a character which would protect all legitimate crepe constructions and guard the buyer or consumer from low twist constructions falling short of offering the qualities expected in crepe hosiery. (See article on page 115, this issue).

The Full-Fashioned Wage Situation

Efforts of a relatively few Pennsylvania silk hosiery manufacturers to operate at a lower piece-wage rate than is standard either among the Philadelphia and Reading open or union shops are having some success. In the rural districts of the state where union organizers find it difficult to make headway, a number of the smaller plants have reduced wages by 10 to 20 per cent since the general set-back of late June and early July. Some of the smaller operators were deterred from making wage cuts when the Ajax Hosiery Company at Phoenixville, Pa., was forced to close down after an attempted re-opening on a schedule of reduced rates. Yet this hesitation was only temporary and lower pay for knitters is becoming more general, especially among the shops that do not finish their own goods, preferring to sell in the gray. Because of the persistent union activities in the Philadelphia and Reading sections, there is increasing interest in plant sites in nearby Delaware and Maryland. One Philadelphia concern opened a branch plant at Dover, Del., where it is reported a wage scale is in effect nearly 50 per cent under that in most Philadelphia plants.

This situation has created a tense feeling in the union ranks which was evident when the Berkshire Knitting Mills permitted some of its workers to return on a recent Saturday, when there was an immediate declaration from the union branch in Reading, which held that the company was violating an understanding in the full-fashioned industry that there would be no Saturday work. Few in the industry believe that Berkshire, one of the firmest believers in the 40-hour week, and a strong adherent of the former code, made this exception without excellent reason. Rather than departing arbitrarily from accepted working hours, the trade regarded it as more probable that the company had begun to feel the serious effects of competition from rural Pennsylvania mills and had decided to make an experiment in meeting the issue.

Previously in the South, the largest makers of seamless hosiery had temporarily increased hours from 40 to 50 weekly in an effort to forestall rural competition. The Hanes Hosiery Mills finally returned to the 40-hour week but only after a wage adjustment that was more in conformity with rates prevailing among the smaller mills in that section. While the present wage rate generally in effect in Pennsylvania and southern mills is expected to be continued after September 1, when the union scale is to be definitely decided upon, there are prospects that the wage issue will agitate the industry through the fall months unless some action can be taken to bring mills in such outlying districts into line. So

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Millions of women from coast to coast know about SPUN-LO'S better looks and longer wear. Last spring the advertising sent this yarn to new sales records. Again this autumn stores everywhere will be filled with women who have learned to depend upon the SPUN-LO label. Chain store managers know this. Hosiery of SPUN-LO is on their listings.

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CLEVELAND, OHIO

far the union has failed to achieve any real successes in these small towns.

Brief for Import Duties on Hosiery

Following up its filing of an official application with the Tariff Commission, for an increase in the import duties on hosiery, the National Association of Hosiery Manufacturers completed a long study of this situation by transmitting to the commission a brief along with necessary exhibits, such as samples of imported cotton hosiery and comparable styles made by American manufacturers. The association pointed out that the President does not exercise his powers to amend rates specified in the Tariff Act, except upon the recommendation of the Tariff Commission. The Tariff Commission does not make any recommendations without first conducting an investigation of its own into the facts. The staff of the commission is now engaged in such a study which the association hopes will lead to a general investigation and that this in turn will result in recommendations to the President to increase the rates within the powers granted to him by law.

It was pointed out that imports of cotton cloth from Japan in June amounted to slightly over 12,000,000 yards, which was almost double any previous month. Hosiery shipments to this country by Japanese manufacturers also continued at a high rate in June and for the first six months of this year, hosiery imports from that country totalled almost 900,000 dozens whereas a year ago for the same six months, imports from that country were only a little over 200,000 dozens. The Japanese shipments are for the most part in the men's end of the business, with children's goods accounting for a small fraction. Based on figures of domestic manufacture, it has been estimated that imports from Japan at their present rate are running well over 5 per cent of the total domestic business in men's half-hose, excluding wool numbers.

Careful consideration of the Robinson-Patman Act by hosiery manufacturers has been urged by their national association. It was pointed out although there are many claims that the law or some of its provisions are unconstitutional and it will be some time before this can be definitely determined, it is wise for manufacturers to conform with its requirements and use every reasonable precaution not to violate it.

Demand for Underwear Active with Volume Considerably Ahead of Last Year

The underwear industry is experiencing one of its most active periods in recent years and prices are being forced upward, particularly on the heavy numbers, because of advances in the raw and yarn market. Manufacturers are completing a long and very active light weight season and in many cases have succeeded at this early date in booking more heavy weight orders than they sold during the entire season last year. In addition to this quite a few manufacturers report that they are receiving numerous inquiries for spring underwear for next year and some report selling merchandise for that delivery, a condition which has not been duplicated for many years.

In general, it is the low prices that have helped to add to volume, although the gain in purchasing power of the country has been another important factor, in bringing about this spurt. Staple underwear for the whole family has been priced for fall by manufacturers at figures that in most instances hardly show a profit for the mill, but which will result in large consumer buying. From the manufacturers' viewpoint, the most encouragement held out in the situation is the promise of a steady run through the balance of this year at least, and the feeling among knitters is general that profits will be largely through economies in the manufacturing processes.

Large wholesalers are finding the outlook for fall business this year better than anything experienced since the exceptionally active markets in 1933, when the NRA with its warning of high prices, led to feverish covering on the part of all retailers. The important difference between this season and that, however, in this fall is expected to bring no such reaction as came late in 1933. It is evident that the past few weeks have resulted in most wholesalers reducing stocks of light weight underwear to a very low figure. The extremely hot weather has moved out merchandise that for a considerable time was still in wholesalers' hands. In view of this, the average wholesaler is viewing his small light weight inventory with considerable satisfaction. This has been a factor in developing talk of operations on the part of some buyers for the 1937 spring season.

The $6.00 level on men's 12-pound cotton ribbed suits has now been reached, several mills having recently put their quotation up to that figure and predictions are being heard already that the $6.12½ price is just around the corner. If this figure actually materializes, the market will be back to the opening figure made early this season. Mills making women's knit underwear have been receiving fall business at a steady rate and are rapidly getting into a better position so far as steady production is concerned. For a number of weeks, this end of the business was disappointing. Many buyers in the wholesale trade were holding back on their regular requirements under the impression that prices would not go up and that mills could give delivery when wanted. With the general market firming up, buyers have been moved to put down their fall business in women's numbers and mills accordingly are more optimistic.

Wholesalers are pressing manufacturers so hard now with new business in men's numbers for spot and future delivery that some mills are calling a halt on the amount of business they will take and are also limiting the future delivery dates more rigorously. This new business, coming in from wholesalers is being booked in the current season's goods at old price levels that have been ruling for some time, or since the AAA went into discard. These prices are naturally low when consideration is taken of the stiff rise in cotton and yarns. The buyer knows he is making no mistake to re-order freely at current price levels and furthermore will probably be better off when the new season for next spring actually gets under way.

Some mills, making light weight underwear in view of this situation, are moving to restrict the volume of this re-ordering, either by fixing a definite dividing line to mark the end of the current light weight season or by insisting on some price advances on part of the new business. A few mills accordingly have fixed August 31 as the latest delivery for current summer business. This is a natural dividing line between the two seasons, since the expectation is that the market by that time will be generally open for the 1937 spring season. It also offers customers a good leeway to finish off the balance of this season as ordinarily the bulk of the light weight buying, wholesale and retail, is over by that date.

Of interest to the mills handling the chain store business is the amount of new fall business being received of late. These retail outlets hardly have begun to dispose of any heavy underwear over their counters. That they are sending in new orders for fall is attracting attention, the explanation of course being that such outlets have marked up their budget requirements for the coming season. Heads of their knit goods departments are optimistic over the future and have let down the bars on buying operations.

Outerwear Market Gradually Improving; Strike Threat Retards Fall Season

Just as outerwear manufacturers were swinging into larger production on fall and winter goods, trading has been disturbed by the calling of a strike of employees in such plants in the New York metropolitan area. General strike plans are being pushed by the union, which is demanding a 20 per cent wage increase and continuation of the 35-hour week. Manufacturers profess not to be worried over the situation and many of them talk of moving out of the metropolitan area into the outlying districts in order to get away from the influence of the union.

The 1936 bathing suit season was one of the most successful that manufacturers in this line have experienced for a number of years, both in respect to volume and holding of quotations at the early season level. The latter was accomplished largely by the general policy of manufacturers cutting off production at a relatively early date and thereby prevented the post-season bargain sales of suits at very cheap prices which was brought about in former years by manufacturers liquidating late goods. In view of the successful season, this group of mills is planning to start work on the 1937 garments several months earlier than usual and in the yarn market evidence of this is seen in the placing of contracts for 1937 swim suits.

REVIEW OF THE YARN MARKETS

Good Demand for All Types of Yarns Continues With Prices Showing No Marked Change

Philadelphia, Pa., August 16, 1936.

ALTHOUGH activity has not continued at the fast pace of July, there has been a fair-to-good demand during recent weeks with the well-sold-ahead situation of most spinners acting to prevent any softness even though the raw material market suffered a sinking spell at the time of the publication of the Government crop estimate.

At the present time spinners are in the best position so far as orders ahead are concerned that they have enjoyed for many years, one of the large combed chains reporting that it has between 12 and 15 weeks business ahead. Although new business has been coming along at a slower rate so far this month, it has not weakened the position of sellers because consumers of all types of yarns are demanding shipments at very rapid rates. Reports are numerous in the market where manufacturers have been asking for deliveries this month of yarns that were not supposed to be delivered until September or October. There is a healthy demand at retail for practically all types of cotton goods and garments with retail outlets experiencing a very good demand for summer weight garments and fabrics.

This strong technical position of the yarn market has been especially evident during the last month. Within this period cotton has declined more than half a cent but there has been no important change in cotton yarn prices over this four-week period. This indicates that spinners have taken advantage of the sinking spell in the raw material market to improve their spinning margins as they have been doing during recent months. Some yarn producers now report that so far as margins are concerned, they are fast approaching a position as favorable as that of last November, when the best showing in this regard was registered. New contracts which developed at an active rate a month ago, slowed down as the time approached for the government to release its first crop estimate on August 8.

This estimate indicated a larger yield than was expected by trade estimates and immediately thereafter the raw material market displayed weakness, which, however, was largely dissipated in the following week and at the time of writing sentiment has become bullish again. At this time a few producers of carded knitting yarns that did not have a large volume of forward business in hand became worried and cut their quotations one-half cent but when the raw market reversed itself, these few spinners quickly changed their ideas and set their quotations back at the former levels.

Another significant feature of the market at this time was that combed yarn spinners took no notice of the decline in the future's market and continued to hold firmly. Long staple cotton is in such a tight position that combed spinners and mercerizers can only see a very firm market for the next few months. Mercerizers are doing the best business they have done in several years in respect to shipments on their present contracts, which were booked at an average of about 5 cents a pound under the present list of 68 cents for 60s two-ply.

Worsted Yarn Prices Steady and Unchanged with Demand Barely Fair

Worsted yarns do not show the zest that is apparent in cotton and rayon yarns, spinners reporting only a nominal poundage during the last four weeks. This condition is evident in a slight reduction in the price of knitting yarn as compared with a month ago, several spinners being willing to sell at 5 cents a pound lower. This reduction was made during a period in which the raw material market was steady and unchanged. In weaving yarns, quotations remain unchanged but manufacturers say that on firm offers they can better the current list by several cents. Weavers of men's wear complain that the Robinson-Patman Act is causing so much uncertainty that they are going to delay opening their new lines for the light weight season until some of these doubts are eliminated.

The knitting section has also been affected unfavorably by the calling of a strike among outerwear manufacturing plants located in the New York metropolitan area. This walk-out and the fear of it among unaffected plants has caused a noticeable contraction in the amount of new business placed and also in the specifications received on old contracts. Notwithstanding this threat, there has been a conservative improvement in knitting yarns over the month which is reflected in more active spinning operations in this district. Several of the larger spinners report running 75 per cent of capacity or at the highest rate in several months. Opinion is in the trade that early in September, when some of the present handicaps have been eliminated, a more active fall coverage will be seen, with price advances being widely predicted.

Rayon Sales Touch New Peaks and Stocks Reach Record Lows

There is a larger demand for rayon yarns than producers can supply at present (as was the case last month) and under these conditions the larger sellers of yarns are allotting their production. In other words, their customers are not permitted to buy as much yarn as they wish but the production is being distributed as widely and as fairly as possible. There has been no change in rayon yarns prices during the month but predictions are being made that the present tight market will bring about another price advance sometime in September. Demand is good from both weavers and knitters, with most producers shipping out at the most active rates in their history. The shortage of practically all rayon weaving yarn numbers is growing acute with producers sold up on these counts through September and practically all of October.

Reserve stocks of desired weaving numbers have been exhausted and current shipments are being made straight from production. Knitting yarns are sold up through their current booking period and knitters are said to be ready to absorb October production when books open for that month. It is generally felt in the market that the rayon yarn shortage this fall will be as acute as it was in September, 1932, when many manufacturers complained of their inability to receive adequate supplies.

Steadiness in the Raw Silk Market Upsets Plans of Knitters to Cover at Lower Prices

American hosiery manufacturers in most instances have been waiting for a decline in the silk market to cover their forward needs but they have been unsuccessful during the last month. Prices have been steady and some weeks fairly strong so that as compared with a month ago, raw silk shows an advance of about 7 cents. Most knitters that do not have forward commitments, have adopted a hand-to-mouth policy as they believe that a period of softness will shortly develop to give them an opportunity of covering at lower prices, which is particularly necessary this year in view of the cheap price that manufacturers put into effect last month on full-fashioned lines. July mill takings of silk were reported as 36,600 bales.

"The Yarn Carrier"

The July issue of *The Yarn Carrier*, house organ of the Wyomissing industries, carries an explanatory article of the Berkshire "crepetwist" and shows that silk hosiery becomes duller as the yarn twist is increased. Another interesting feature of this issue is the 21st installment of a series of articles describing the Reading full-fashioned knitting machine.

Non-Technical Booklet by Swartwout Company

The Swartwout Company, 18511 Euclid Ave., Cleveland, O., have published a booklet that is a non-technical treatise on ventilation for industrial and commercial buildings. The booklet, No. V-100-B, shows that ventilation is a necessity and not a luxury, that it is a paying asset, not an expense. Information is given on estimating the size and number of ventilators required to properly ventilate a building.

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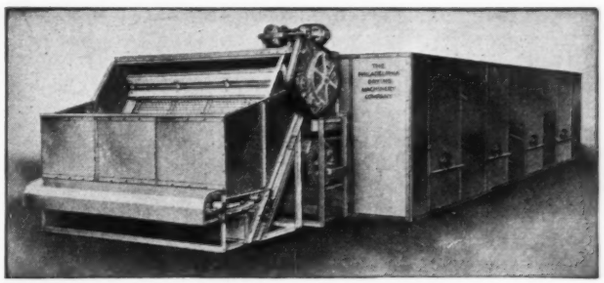

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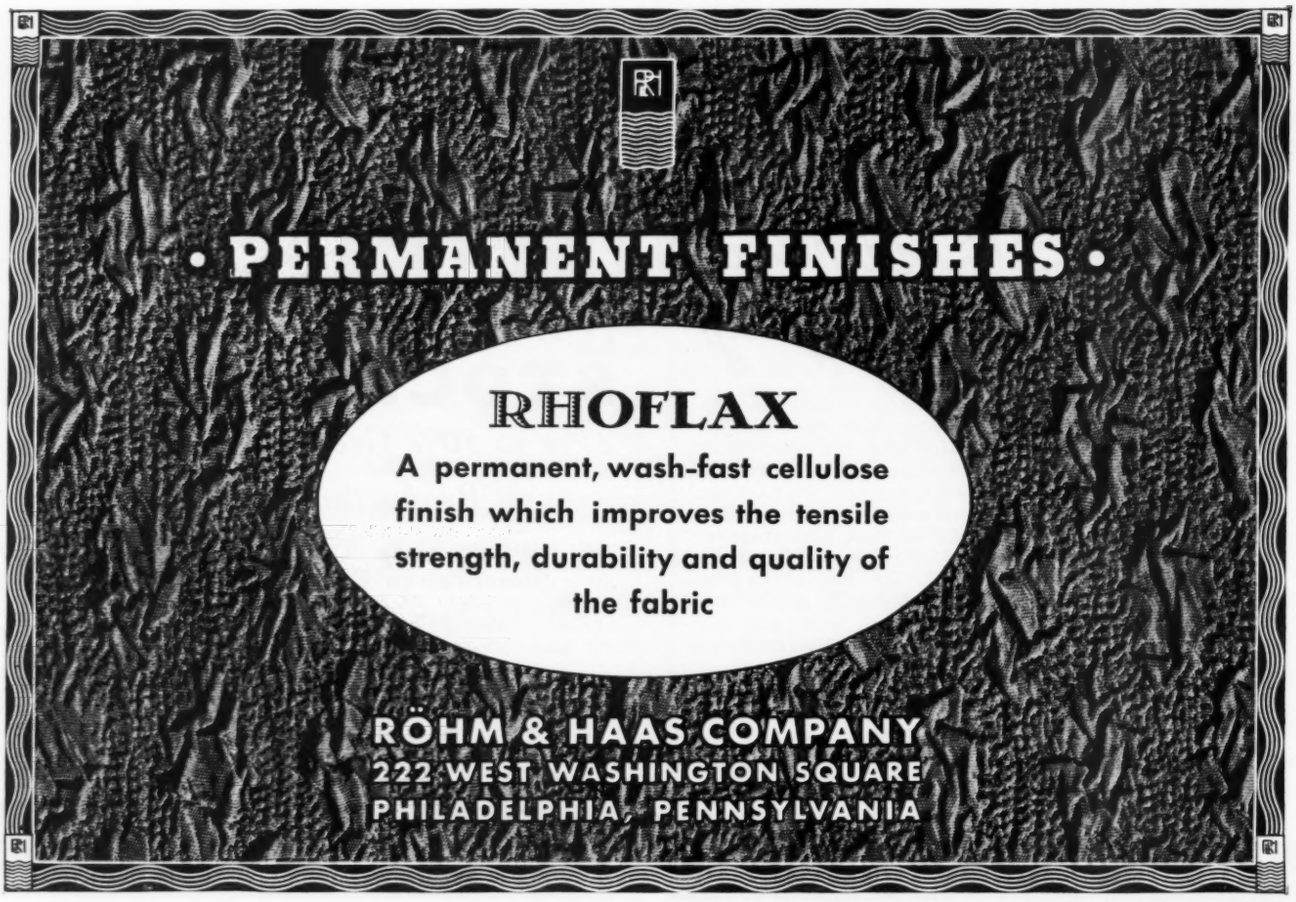
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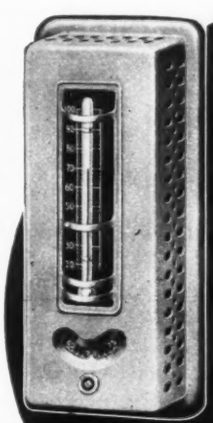

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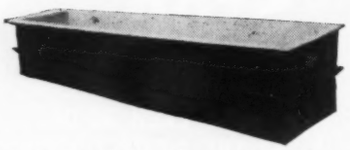

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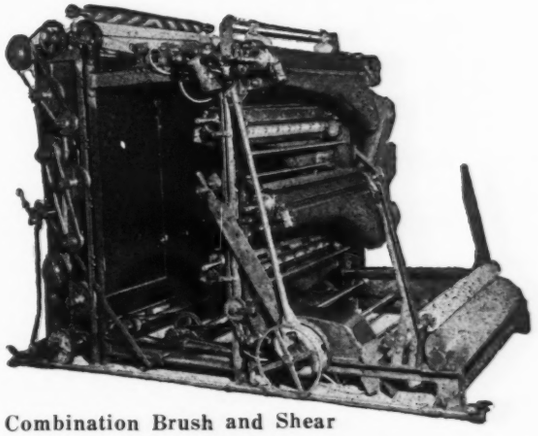

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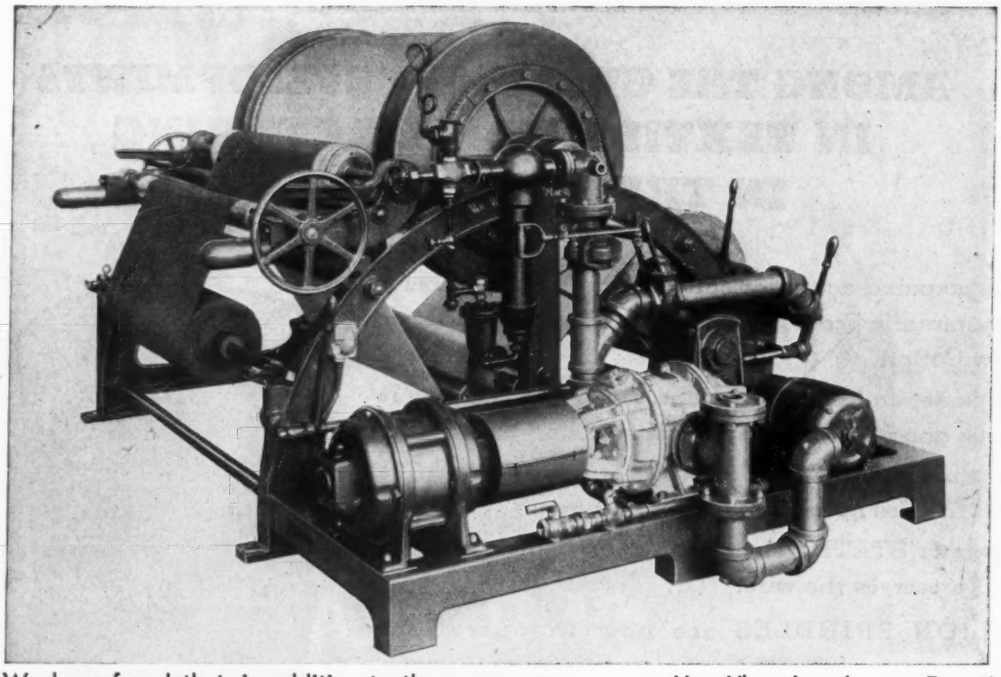

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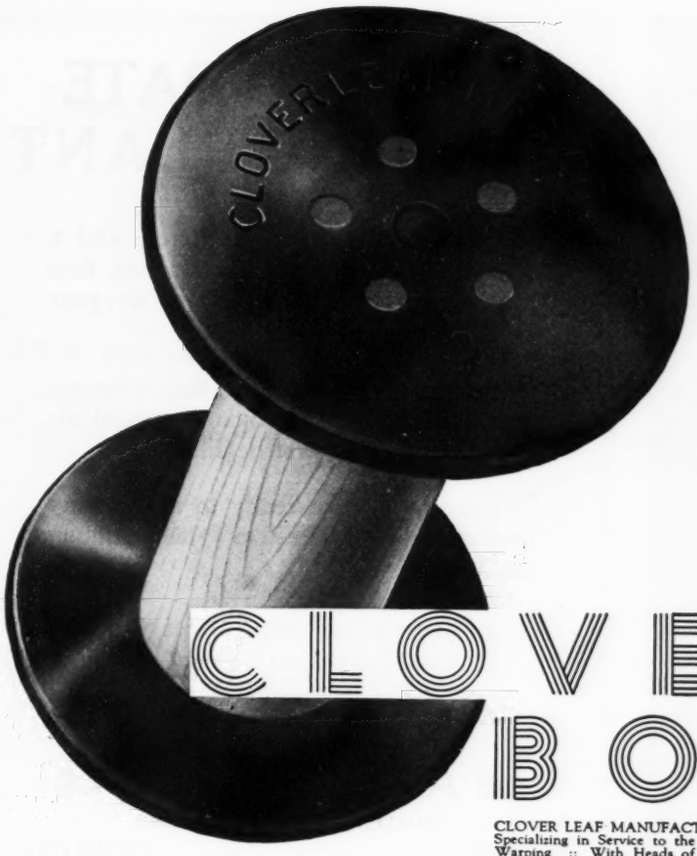

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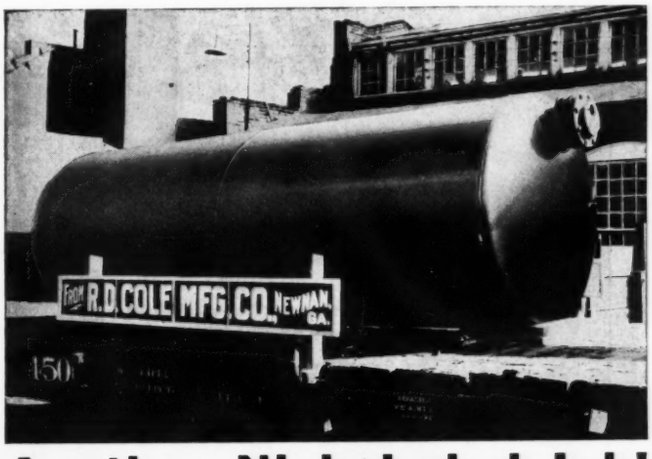

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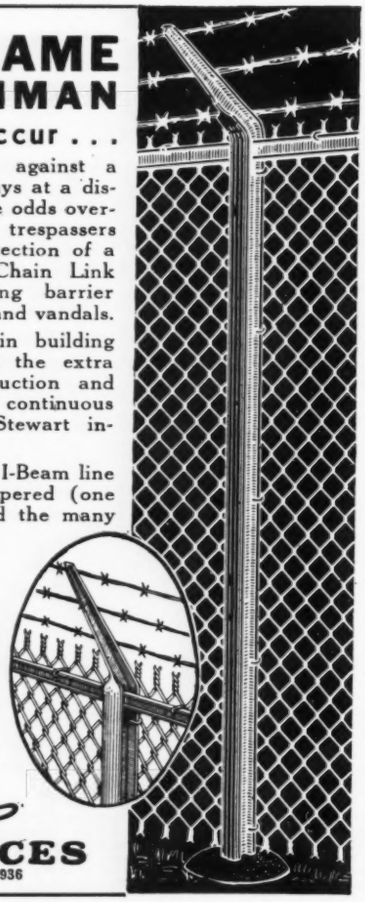

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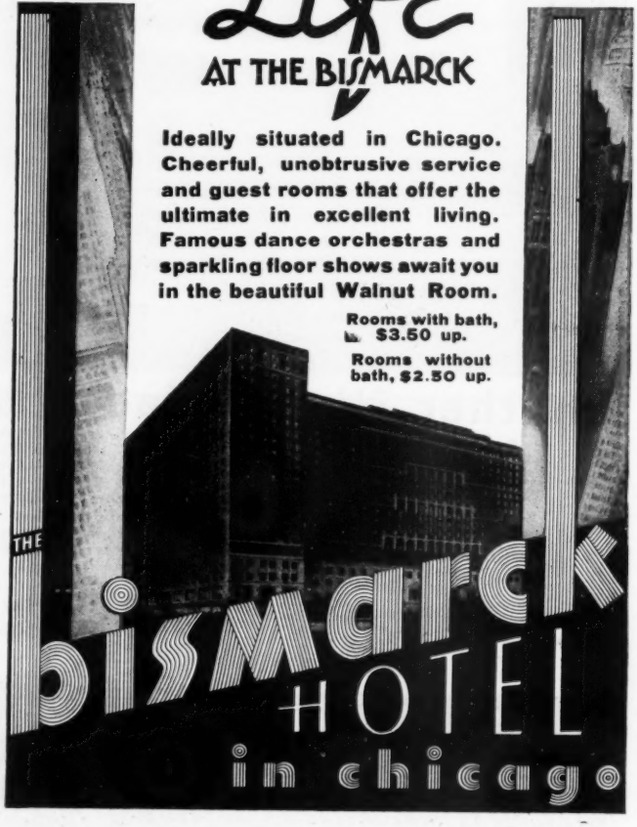

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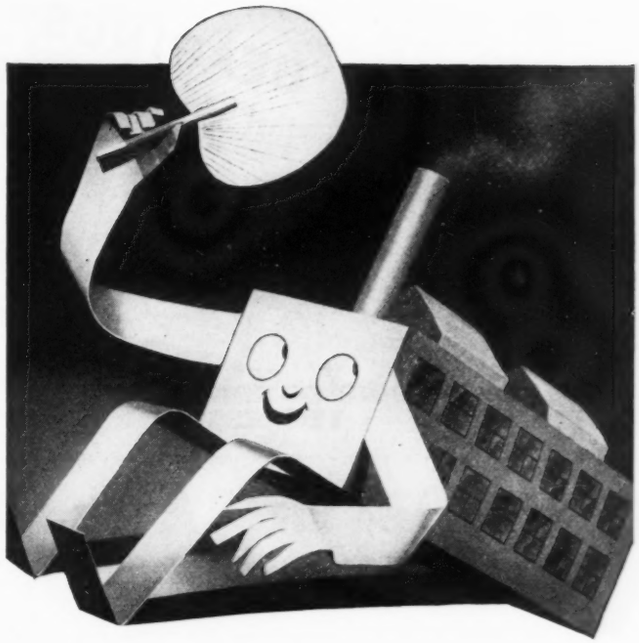

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Heat evaporates water. The more heat, the more water that can be evaporated . . . more evaporative cooling obtained. But maximum cooling can only be obtained when your mill is given *maximum air change while humidity is maintained constant.*

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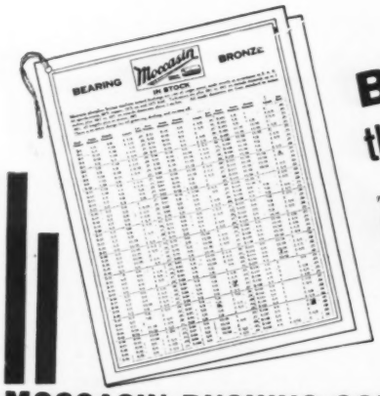

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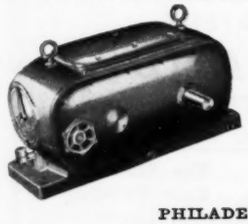

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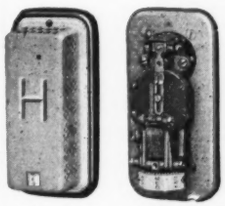

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Johnson manufactures also a wide variety of automatic temperature regulation devices for the control of space heating and of processes throughout the mill . . . . . A single, nation-wide organization devoted to this one line of business for more than fifty years.

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The exacting demands of both the Underwriters and the Associated Factory Metal Laboratories have been met in the construction of Thermoid Fire Hose. This hose is furnished with the Underwriters label when requested. Made in the cotton single and double jacket types; also in rubber covered single jacket type. Obtainable from your supply house in 50 foot lengths complete with either standard pin or rocker lug couplings in 1½", 2" and 2½" sizes. An extremely durable and thoroughly dependable product.

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Ask your supply house for more complete details or write direct to Thermoid Rubber Co., Trenton, N. J.

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BELTING · PACKING
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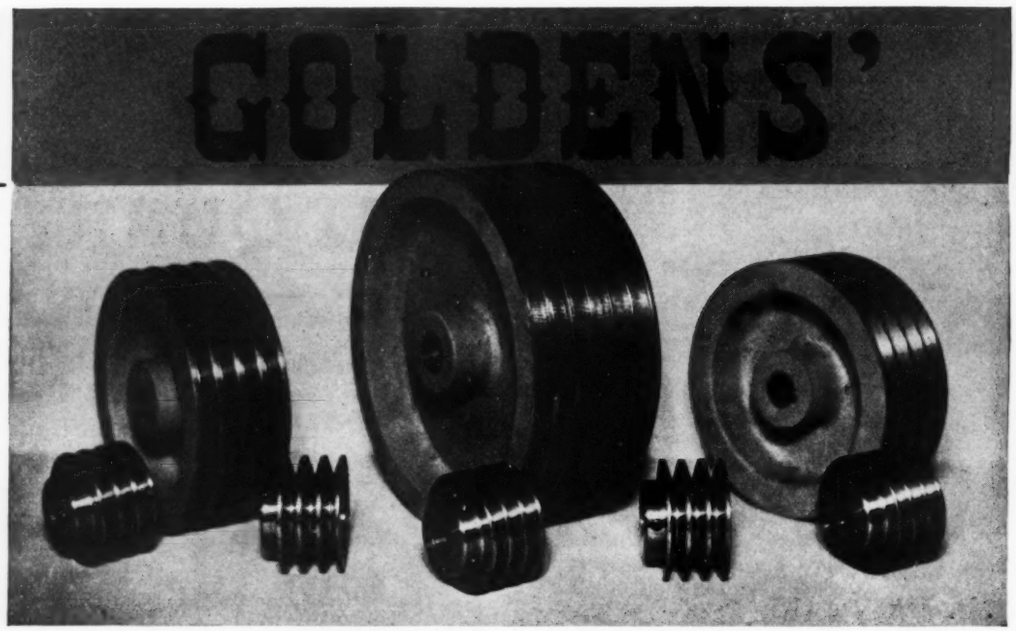

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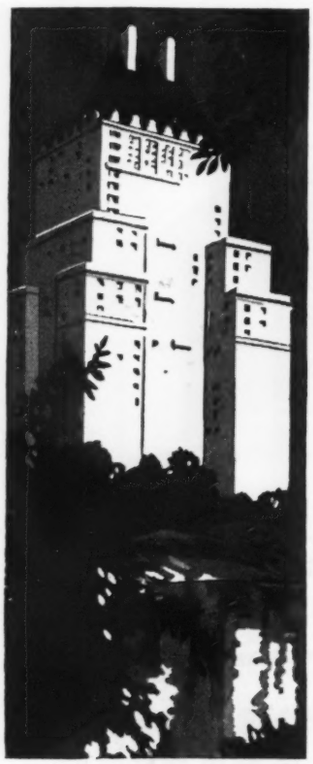

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IN NEW YORK for COTTON MEN

Executives of your industry have favored The Vanderbilt for years... here you will always find men you know...or wish to know. It is convenient for your business requirements . . . ideal for entertaining.

Spacious rooms with bath from $4. single . . . . $6. double

FIVE MINUTES FROM GRAND CENTRAL OR PENNSYLVANIA STATIONS

The VANDERBILT HOTEL

Where Park Avenue Begins . . . at 34th Street

NEW YORK

Cooper Stainless Castings

The ideal metal for corrosion resistance in the

Textile Industry

PROMPT SERVICE

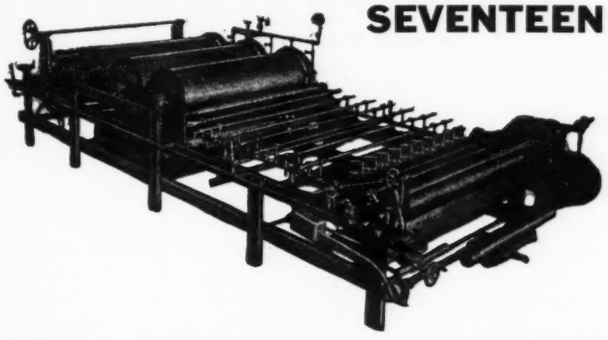
—by the largest producers specializing in 18-8 stainless steel castings.

The Cooper Alloy Foundry Company
ELIZABETH, N. J.

Distributors:

Jos. T. Ryerson & Son, Inc., Chicago, Milwaukee, Cincinnati, Cleveland, Buffalo, Detroit, Philadelphia, St. Louis, Boston, Jersey City.
Kingsport Foundry & Mfg. Corp., Kingsport, Tenn.
Starke Foundry & Mfg. Co., Richmond, Va.
Petroleum Equipment Company, Los Angeles and San Francisco.

ONE MANUFACTURER ORDERS SEVENTEEN



NEW JOHNSON SIZERS

As a result of the improvement made in Johnson rayon sizers one firm recently ordered a new machine. Shortly after they ordered 6 more and soon after that they ordered 10 more machines or 17 new machines in all. This is indicative of the quick response received from all over the textile industry to the better production of this sizer.

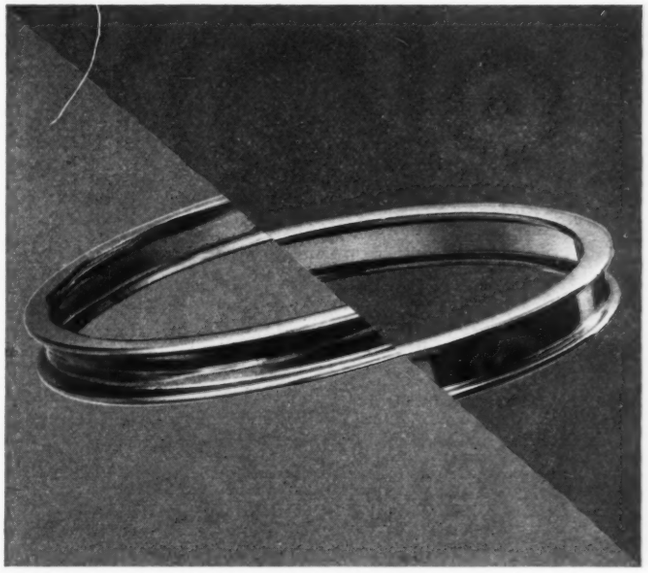
If your plans call for new sizing equipment we urge that your reservations be entered at the earliest moment.

7 times as much rayon is sized on Johnsons as on all other rayon sizers combined.

CHARLES B. JOHNSON
PATERSON, N.J.

Southern Representatives
Carolina Specialty Co., Charlotte, N. C.

New England Representative
Joseph Barnes, New Bedford, Mass.



Are Worn Rings Holding You Back?

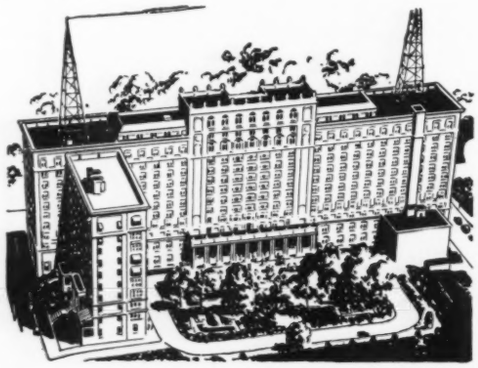
The samples we are receiving with orders indicate that many mills run their rings long after they have ceased to provide a proper bearing for the travelers. Look your rings over for wavy or narrow flanges. If they appear faulty, install one frame of new DIAMOND FINISH Rings and check the cash value of the improvement.

If travelers could talk, we wouldn't need to advertise rings.

WHITINSVILLE (MASS.
SPINNING DIAMOND FINISH **RING CO.**
Makers of Spinning and Twister Rings since 1873

Southern Representative: WALTER L. NICHOLSON, 2119 Coniston Place, Charlotte
Mid-West Representative: ALBERT R. BREEN, 2650 Coyne Street, Chicago

The Most Looked-Up-To Address in Atlanta



Air-conditioned by Nature—no tall buildings near by to divert the breezes.

Come to

The Biltmore

for

Cool Comfort

From the moment you arrive until your departure we make every moment of your stay restful and delightful. Courtesy is our watchword. Spacious grounds, tall trees and flower gardens constitute perfect surroundings for relaxation and rest.

600 outside rooms—each with bath, circulating ice water, electric fan, and other modern conveniences and scores of attentive attendants assure you a warm reception and COOL COMFORT.

Single rooms $3, $4 and $5; two persons in room (double bed) $4.50, $5.50, $6.50; two persons in room (twin beds) $5, $6, $7. Popular prices in Main Dining Room and Coffee Shop. Table d'hote dinners or a la carte service.

Atlanta

BILTMORE ★ HOTEL

"THE SOUTH'S SUPREME HOTEL"

IN PHILADELPHIA, PA.

HOTEL PHILADELPHIAN

(Formerly Hotel Pennsylvania)

39th and CHESTNUT STREETS

PHILADELPHIA, PA.

A SYMBOL

HOTEL PENNSYLVANIA PHILADELPHIA

OF HOSPITALITY

When you visit Philadelphia make **HOTEL PHILADELPHIAN** your home . . . You will find its location convenient—ten minutes to the business section . . . away from congestion and noise. . . . Known the world over for its hospitality . . . food that satisfies.

600 ROOMS, Each With Bath

From $2.50 Single, $4.00 Double

UNRESTRICTED PARKING UP TO 3 A. M.

DO AWAY WITH

SUN-GLARE

Raise Production and
Health Efficiency in Your Plant

TINT Your Factory Windows with

TRUSCON

Opaltone WINDOW GLAZE

● Sun glare means eye strain. Eye strain means quick fatigue and jittery workmen — poorer work and less of it. You do away with sun glare entirely when you tint your factory windows with Truscon Opaltone window glaze.

Opaltone is tough, durable and impervious to weather. It can be brushed or sprayed on the outside (or inside) of your windows. Furnished either in tints of blue or white, Truscon Opaltone diffuses sun glare. It strikes through your windows and fills your factory interior with a soft, restful light. Over 90 percent of daylight is maintained. Inside temperatures are reduced as much as 10 to 15 degrees through the use of Opaltone.

Try a gallon of Opaltone on some few windows of your plant that are giving you particular trouble because of sun glare. Prove its efficiency yourself. Learn from experience how durable it is—and that it will not rub or flake away. It is a real Truscon waterproof product which rain or weathering cannot harm. Write for prices and full information.

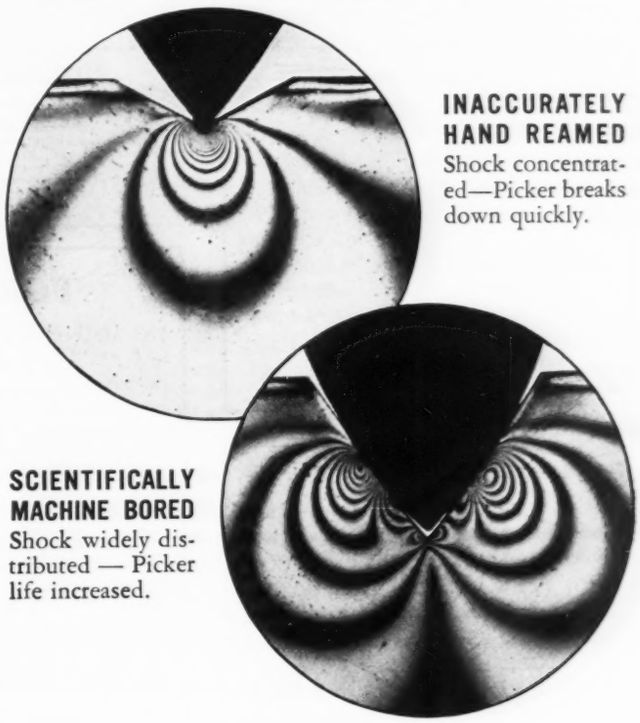
Let Truscon Maintenance Engineers Work with You. Their Service Is Free

Whether you want to paint a roof, acid-proof a floor, coat some surface which won't retain ordinary paints—or cut costs on your paint and varnish requirements—get the expert advice of a Truscon Maintenance Engineer. He has the experience and technical knowledge to help you solve your problems and save you money besides. A Truscon Maintenance Map giving full description and diagrammatic illustrations of Truscon Maintenance Engineering Service will be sent to you free.

THE TRUSCON LABORATORIES
DETROIT · MICHIGAN

PHOTO-ELASTIC PICTURES

SHOW HOW SCIENTIFICALLY DESIGNED SHUTTLE HOLE CUTS YOUR PICKER BILL . . .



INACCURATELY HAND REAMED
Shock concentrated—Picker breaks down quickly.

SCIENTIFICALLY MACHINE BORED
Shock widely distributed — Picker life increased.

In the laboratories of one of the world's finest scientific institutions, comparisons of stress distribution in various pickers showed that **THE PICKER WITH THE LIFE SAVER HOLE LASTS LONGER.** Only the Graton & Knight 50 Type Picker has the hole accurately pre-cut to fit the shuttle. It's a patented feature no hand-cutting can match and it cuts your picker costs in half. Some reports show the 50 Type Picker out-lives others more than 2 to 1.

Call Western Union for the name of the nearest Graton & Knight distributor. (No charge for this service.)

50 TYPE PICKER

THE PICKER WITH THE LIFE SAVER HOLE

GRATON & KNIGHT CO., WORCESTER, MASS.

2184

TRADING POST EXCHANGE

BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES

DISPLAY RATES

Rates are net, payable in advance each month. No commission or discounts. Page is 3 columns, 10 inches deep—30 inches to page. Space measured by even inch vertically by 1, 2 or 3 columns in width. Column width 2¼ inches. Rates based on the total space used in one year.

	Per Inch		Per Inch
1 inch	$5.00	15 inches	$4.20
3 inches	4.80	20 inches	4.00
6 inches	4.60	50 inches	3.80
10 inches	4.40	100 inches	3.00

UNDISPLAYED

Advertisements set "Want ad" style. Positions wanted .05 word per insertion. Minimum charge $1.00 per insertion. Cash with order. All other classifications .10 word per insertion. Minimum charge $2.00 per insertion. Advertisements of equipment, for sale, rent or wanted and professional cards are accepted at display rate only.

Box number address care of COTTON, Grant Bldg., Atlanta, Ga., count as eight words.

POSITION WANTED

Middle aged man with 22 years experience in the Full-Fashioned Hosiery Business. Fully experienced in cost, care of machinery and training of help. Expert on lace and all kinds of fancy work. Would like position as manager or superintendent, can furnish best of references. Address Box 404, c/o COTTON, Grant Building, Atlanta, Georgia.

POSITION WANTED

A Philadelphia Textile School graduate, 27 years of age. Four years' experience as superintendent and manager of a large Southern Combed Cotton Spinning mill, one year on cotton yarns with U. S. Government and one-half year selling experience. Desirous to locate in any capacity with a progressive textile organization. Available on short notice. Address Box 399, c/o COTTON, 1020 Grant Bldg., Atlanta, Ga.

Paul B. Eaton

PATENT ATTORNEY

1408 Johnston Bldg., Charlotte, N. C.

514 Munsey Bldg., Washington, D. C.

Former Member Examining Corps
U. S. Patent Office

FOR SALE

170 Midget feelers now running, $5 each. Apply Box No. 406, c/o COTTON, Grant Bldg., Atlanta, Ga.

POSITION OPEN

The Brooks Oil Company desires experienced salesmen to cover two established territories selling improved boiler metal treatment, industrial paints, roofing material and other products. Only well qualified and recommended need apply. Must have car. Drawing account and high commission. State full experience and references. Address Brooks Oil Co., Cleveland, Ohio.

WANTED

Position as master mechanic — any size plant, anywhere—Interview welcomed. Address Mechanic c/o COTTON, Grant Bldg., Atlanta, Georgia.

POSITION WANTED

Foreman desires a position in a full-fashioned hosiery mill. 15 years experience in fixing all styles of looping and seaming machines. Capable of managing examining and personnel efficiency. Excellent recommendations. Apply Box No. 407, c/o COTTON, Grant Building, Atlanta, Ga.

WE PAY CASH!

For Surplus or Odd Lots of Yarn
Rayon, Spun Silk, Raw Silk
Wool—Worsted—Cotton
(Any form dyed or Undyed)
QUANTITY NO OBJECT
J. C. YARN CO.,
109-111 Spring St., New York, N. Y.

POSITION WANTED:

Dyer, 17 years experience in cotton, rayon, celanese, yarn and piece goods, desires position in the South. Graduate chemist. Laboratory and research experience. Married, sober. Address Box 405, care of COTTON, Grant Building, Atlanta, Georgia.

POSITION WANTED

Cotton industrial thread man now and always employed seeks connection, preferably in North Carolina. Experienced in manufacturing, testing, cost analyzing, commercial and government purchasing, and management. Address "Thread," c/o COTTON, Grant Building, Atlanta, Ga.

"COTTON MILL MACHINERY CALCULATIONS"

EVERY Textile Man should have these reference books. They cover in a detailed and thorough manner all calculations necessary to be made on any cotton mill machinery manufactured in the United States and constitute one of the best references on the subject obtainable. The two volumes are illustrated with 45 diagrams and contain 21 reference tables. Strong, serviceable binding. You can secure them in conjunction with a three-year subscription to COTTON.

DO YOU WANT TO SELL IT?

Probably you, like many other mills, have some equipment which you have taken out or are thinking of taking out and replacing with new equipment.

Why not dispose of that second-hand machinery at a profit? COTTON has the largest circulation among the textile mills of the United States of any textile publication.

You Can Sell Your Second-Hand Equipment

to these mills through advertising in the "Trading Post Exchange" of COTTON. Such advertising produces results at small cost—why not try it out and get that second-hand equipment off your hands in a profitable way? Tell us what you have for sale and let us insert an advertisement.

COTTON

GRANT BLDG. ATLANTA, GA.

HOW MUCH DOES

THIS COST YOU?

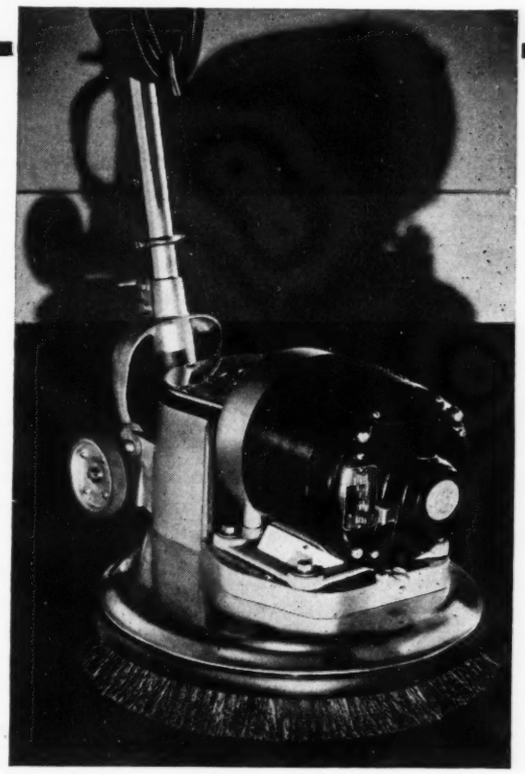
Whatever it may cost, if you are trying to clean floors by mopping them, you are not saving money. You may think it is costing you less than other methods. But such is not the case.

Nor are we thinking only of the cost to you of half-cleaned floors, floors that make for soilage and spoilage, that create accident hazards.

We mean that in actual dollars and cents FINNELL can show you a way to clean your floors electrically for less than you pay for mopping.

Say the word and we'll make a confidential survey of your floors; tell you approximately what you may save by installing a FINNELL system. We have a trained man near enough to you to make an appointment at virtually any time you designate.

To arrange for a survey—or for a free demonstration—or to request a copy of our latest pictorial presentation of the FINNELL,—address FINNELL SYSTEM, Inc., 1309 East Street. Elkhart, Indiana.



This is one of the FINNELL Line of scrubbing-polishing machines. Others larger, ranging up to a giant that scrubs and dries from five to ten thousand square feet an hour . . . and smaller models able to get into narrow aisles and cramped areas.

FINNELL SYSTEM

EST. 1906

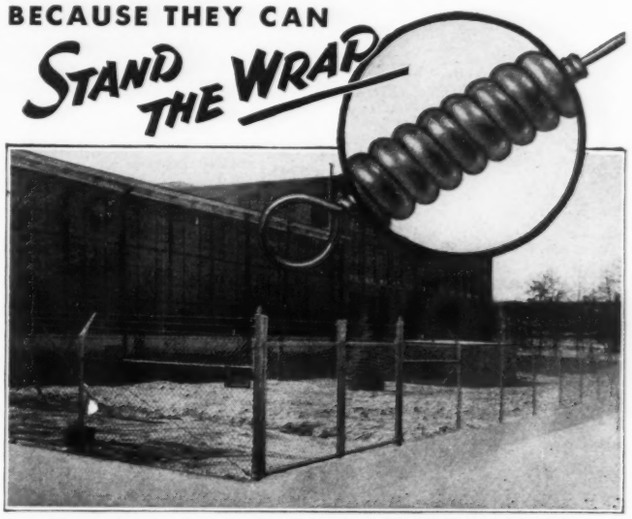
OF FLOOR MAINTENANCE

THEY OUTLAST

ALL OTHER CHAIN LINK FENCE

BECAUSE THEY CAN

STAND THE WRAP



No weak spots for corrosion to attack—the BETHANIZED Wire can be wrapped around its own diameter without breaking or flaking its corrosion-defying coat.

HERE are the quick facts. Unlike other chain link wire, the zinc coating on Bethanized Wire is chemically pure—free from any vulnerable iron content. It is smooth and uniform—free from rough or thin spots. And it is extremely ductile—not hard, brittle and flaky. Twist the wire, bend it double, wrap it around itself—you just can't break the zinc coating and expose the steel core to corrosion.

Think what that means. An Anchor Fence of Bethanized Wire is a fence with no flaws in its pure zinc armor—no cracks or crevices through which corrosion can creep in. Because Bethanized Wire can *"Stand the Wrap,"* these Anchor Fences outlast all other chain link fences—even in industrial atmospheres that are heavy with soot, salt, sulphur and other corroding agents. And now there's no premium—no extra cost—for Bethanized Wire.

Anchor Fences of Bethanized Wire—in types to suit every industrial requirement—are immediately available to you through sales and erecting offices located in every important industrial center in the South. Learn why the new Anchor Fences of BETHANIZED Wire will outlast by many years any other chain link fence you can buy. Mail the coupon—and bring yourself up to date on chain link fence.

ANCHOR *Fences*

OF BETHANIZED WIRE

TODAY PLEASE

ANCHOR POST FENCE COMPANY 36

6625 Eastern Avenue, Baltimore, Maryland

I will appreciate a copy of your free specification manual giving full details concerning ANCHOR FENCES OF BETHANIZED WIRE for Industrial Property.

Name _____

Address _____

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In October

The Southern Textile Diversification Number

of

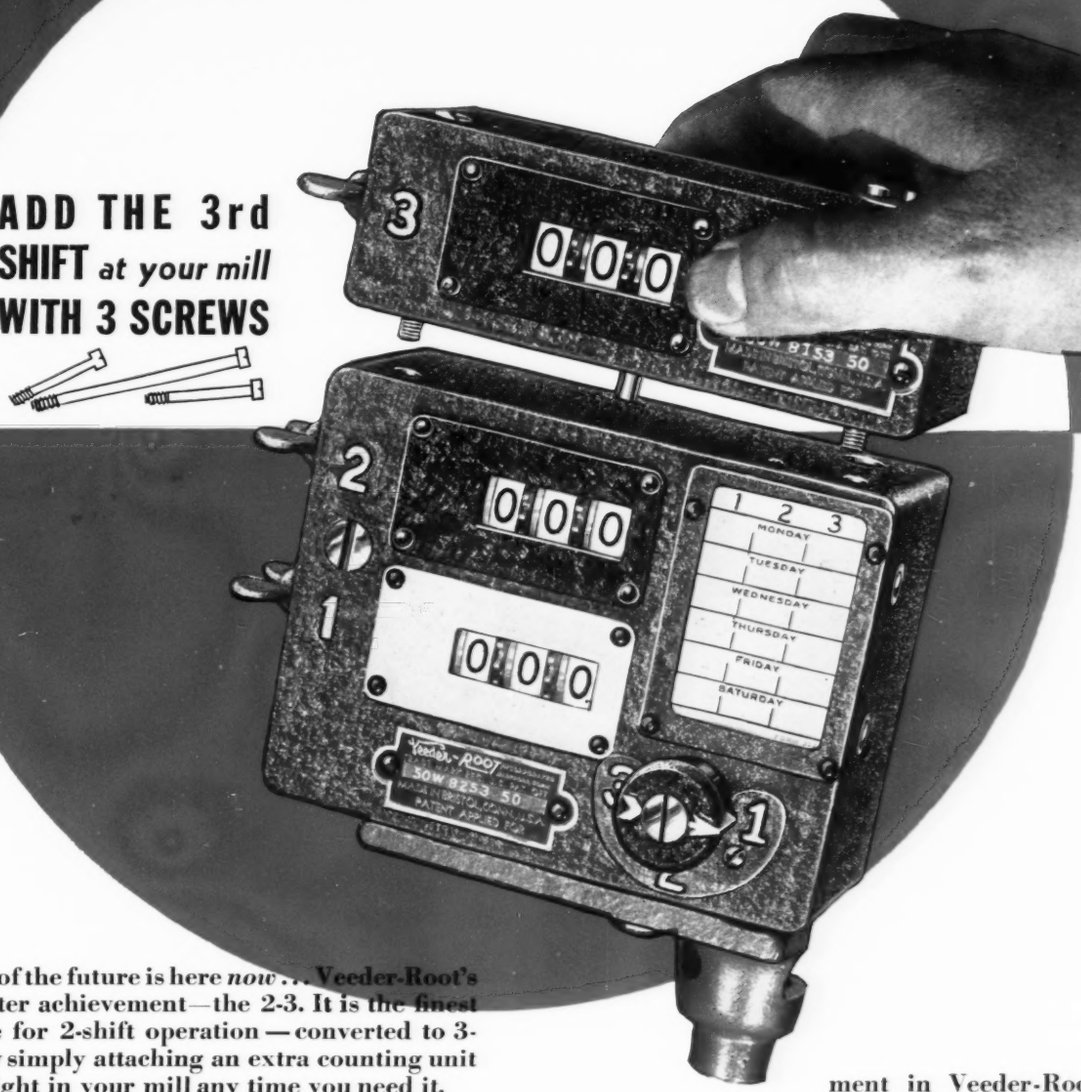
COTTON

Forms Close September 24th.

The New 2-3 . . .

Tomorrow's Pick Counter *Today*

ADD THE 3rd SHIFT *at your mill* **WITH 3 SCREWS**



The pick counter of the future is here *now* . . . Veeder-Root's newest pick counter achievement—the 2-3. It is the finest device obtainable for 2-shift operation—converted to 3-shift operation by simply attaching an extra counting unit with 3 screws—right in your mill any time you need it.

The 2-3 Pick Counter gives you protection against obsolescence. For this you pay very little because the combined cost of the 2-shift counter plus the 3rd shift unit is only slightly more than a complete three-shift counter bought as original equipment.

The 2-3 again demonstrates Veeder-Root's ability to make pick counters exactly to your needs—to protect your investment in Veeder-Root equipment. 30 years ago Veeder-Root designed, built and installed the *first* pick counters and Veeder-Root has made every important development and improvement in pick counters *ever since*.

Write your nearest Veeder-Root branch office for an immediate demonstration of the new 2-3 pick counter. See how easily it is converted from 2-shift to 3-shift operation. Learn first hand how much money it will save you.

VEEDER-ROOT, *Inc.*

HARTFORD, CONN. • BOSTON • PHILADELPHIA • MONTREAL • LONDON • GREENVILLE, S. C.

BUILDERS OF COUNTING DEVICES SINCE 1878

THE REPUTATION of more than one rayon Finisher has been built on

VELVO-SOFTENER #25

It is an excellent finish for rayon or acetate fabrics. Successful converters have long been aware of this fact.

VELVO-SOFTENER #25

- Gives a lovely, soft hand • a real suede finish.
- Fills the fabric as well as softens.
- Leaves no oily feel and does not mark.
- Readily soluble in warm water.
- Will not "yellow" white material.

Use VELVO-SOFTENER #25 for finishing rayon crepes or sheers, taffetas, linings, hosiery, or any acetate fabric.

Be the NEXT to test its merits. Working sample is set aside for YOU!

ROYCE CHEMICAL COMPANY

Chemical Manufacturers

CARLTON HILL NEW JERSEY